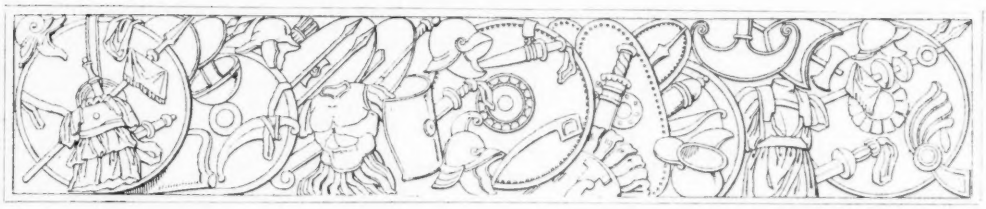


THE VALUE OF SIMPLICITY IN ARCHITECTURE.

I. By Halsey R. Ricardo.

Read at the General Meeting, Monday, 11th February 1895; and, with the illustrations, registered at Stationers' Hall as the property of the Royal Institute.

IN the words of Mr. Ruskin, "Architecture is the art which so disposes and adorns the "edifices raised by man, for whatsoever uses, that the sight of them may contribute to "his mental health, power, and pleasure," and in his fourth aphorism it is further stated that "all architecture proposes an effect on the human mind, not merely a service to "the human frame." And we know that these words are true. This effect may be the expression of the individuality of the architect, or the owner of the building, or a fusion of their associated individualities. There is a fourth product which is the outcome of the want of individuality in both parties, where the result is an acceptance of the current mode of the day, and the building is reared as a tribute to the ephemeris of our art. Mainly it is the architect who speaks through his work; the building-owner sets him the conditions, but their resolution is his occupation. "By their works shall ye know them." There is an idle saying that no man is a hero to his valet, meaning that a man who is not a hero cannot impose himself as one on another so near his person; a sham hero may hoodwink and blind his followers a thousand times in a day in the security of deceit; but let him once put hand to brush, chisel, or lyre, and his secret is out, abroad, clamant, for those who can see and hear.

The butcher Pollajuolo, the penitent Botticelli, peacock Crivelli, the curious and masterful Tintoretto—their brush paints them naked, with their passions playing in flames of fire over them. Take music: the evidence is equally glaring. There is Bach—a mass of passion held in magnificent restraint—innocent-hearted Haydn, profuse Mozart, mystical Schumann. In sculpture there is Verrocchio, knight-errant in soul, sturdy, and something aggressive; the clear-minded Donatello; passionate Michael Angelo, burning to wrest the stars from their courses, that they may bind and illuminate the emotions he is striving to portray. One might multiply instances that would take days to enumerate, and still not touch on the realm of literature.

In architecture, man's individuality is swiftly discernible. The Zeitgeist is upon him, and him more than other artists, since his products have to serve material needs more instantly and definitely than a picture or a symphony. In his building one may see his tastes, his learning, his humours, and, more especially and more importantly, his aspirations. In past work, these latter are not so clear. Time has rolled up, wrung out, and thrown aside into the limbo of dead facts the difficulties and obstructions of the period in which the building rose, and one can only in part conjecture how the architect burnt his way upward through the crowd of vexations and restrictions that clogged his every step; but of our contemporaries it is more easy to estimate the difficulties. We are making the same fight ourselves; their dragons are our dragons; not quite so clawed and poisonous as ours, perhaps, but certainly of

the same breed; and our chiefs' armour grows stouter and firmer from the attacks upon it. Let not a man think to conceal his identity: a moulding betrays him; the preparation for a cornice or the stopping of a string-course proclaims him. His windows slam upon him; the ribald chimney-pots dance upon his chimney-stacks in riotous denunciation. I have said the spirit of the age is upon him, but in part he is the creator of it. The master minds construct the future modifications of that effigy, which, like the cloud on a mountain side, is thought to be motionless because it does not change its place, but which, on observation, we perceive to be in ceaseless change as the wind drives the heated vapour across the cold current from the thawing snow. Nevertheless, the bulk of requirements laid on his shoulders are of the central form of the effigy.

Living architecture is that which answers the requirements of the day. The requirements may be modest and sensible, and then the architecture will be beautiful and strong; they may be affected and individual, and then the architecture will be so far paralysed, its beauty so far pathetic, and in time perhaps denied; they may be extravagant and vulgar, and the architecture will be violent and vulgar in response. One hears this age called a practical age—an age of inventions, of progress; steam and electricity have changed the face of the globe for us—an age of hard matter-of-fact reality. And yet, in our profession, how we have been playing and pretending!

Early in the century we threw off the weight of 300 years, and, masquerading as perpendicular Goths, went about our business of the day. Then some very superior people shook off a couple more centuries, and attempted to play at being knights out of armour. But the small violences done to chronology, and the incessant discrepancy in the details of daily life, made the attempt short-lived. It was a time of red-hot enthusiasm in our play, and we built fairy palaces—at Westminster and Temple Bar—dream palaces in real stone; beautiful evidences of our pretence. But all day long incessant small discrepancies knocked at our doors. We could not really recall the past centuries, and weld them into the present. You cannot have Cook's excursionists on the island of Capri, if you are going to replace Tiberius Cæsar there. Time, the policeman, moved us on, and we proceed to play just round the corner. We took off our armour, and put on dress swords and bag-wigs. The 150 years or so seemed a bridgeable difference, and Christopher Wren a good serviceable stock on which we could graft what of Italian, Dutch, German, or other, we might choose. And at this point we are now arrived. The whole past is a vast treasury for us to draw upon. But this wide range of choice, and our coquetry with the dead past, has been attained with the loss of tradition. Whilst the boundaries of knowledge have been enormously enlarged by the collection of data from over the whole inhabited globe, the architect of to-day finds himself unsupported.

And this want of traditional support has had the result of clogging and obscuring his mind with detail. There is no help now to be got from the mason's shed or the carpenter's bench. The traditional methods have been obliterated; new-fangled and old-fangled methods have quite obscured the current methods, and the craftsman looks to the architect's drawings for guidance in the minutest particular.

Now, leaving out of sight altogether the result of this state of things on the craftsman, so far as this means thoroughness in an architect's grasp of his work, it is wholesome; but there is a strong tendency to adopt the opinion that detail will pull one through, even if one cannot get the masses right. A profusion of small members and architectural finery distracts the eye and masks the proportion; few people, indeed, have any sense of the one, but the attention of almost anyone can be arrested, and his amusement secured, by something unexpected in ornament.

To take one of the latest instances which have come under my notice. A short while ago

the Terrace in High Street, Kensington, came into the hands of the builder. The buildings, low and out of date, stood back from the road, and their reticence did something to counteract the unpleasant constricted feeling that one has in the High Street. In one of the houses John Leech finished out the years of his life; but such claim for permanence was too slight to be considered; the houses were pulled down, and a large block erected on the advanced frontage. The ground floor is built in the "practical" style—that is to say, there are brick party-walls, some steel knitting-needles, and some sheets of plate-glass. Above this rise four storeys of domestic architecture in the style of the Man in the Street. The building is curiously illustrative of the temper of the day. Built to capture the average man's fancy, we may suppose it a successful example of what the average man requires. First of all, it is devoid of proportion; its sky-line is jagged and fussy, its masses are ill-arranged, its window-openings brutally ill-shaped. Secondly, it is devoid of stability—the four storeys rest on sheets of plate-glass placed edgeways. On the other hand, it is covered with knick-knacks and the general frippery of architectural ornamentation. The inference to be drawn is that the number who appreciate good proportion is so small that it may be disregarded, but almost anyone can enjoy a pilaster with its hair well curled and frizzed. One may ask, Why not have good proportion as well? It sounds reasonable. But a man who builds for the evil aspects of our age, frankly endorsing them, is incapable of good proportion. Good proportion involves self-restraint and sacrifice. Self-restraint and sacrifice in these days of universal emancipation and unexampled progress! Across the road, and forming its north side, are two blocks of buildings called Lower Phillimore Place. They are not conspicuous examples of good proportion, but they are simple, quiet, and refined. They look with scorn at the blazing vulgarity of the newcomer opposite. Seventy years ago we should have called them builders' houses of a good type; to-day we call them dull. Our jaded appetites will not rise to a design so tame and monotonous. Think for a moment of the din and clamour amidst which we live. Our eyes and ears are so ceaselessly assaulted that they have grown callous, and nothing but extreme effects arrest our attention. The shopman, to secure his customer, spends thousands on advertisement, on recondite forms of illustration; his shop is one huge blaze of electric light or gas; men stand at the doors to delay the traveller's passing by without entering; strange forms perambulate the streets to fasten the remembrance of his wares or his name in the victim's mind; huge lettering eclipses the front of the shop, and huge glass lamps threaten annihilation to the pedestrian. This is the complexity of competition, due to the increasing density of our population. Then there is the complexity of the intellect. Our poets write in so involved a way that we are forced to have Browning Societies to explain what the master meant. There are some who unblushingly say that they cannot understand Mr. Meredith's novels. In music, none but a skilled musician has a chance of disentangling the labyrinthine intricacy of a symphony by Brahms. In opera it is enough to remark that Wagner requires an orchestra of one hundred and fourteen performers for the *Walküre*, and one can imagine what kind of tapestry of sound such a loom would produce.

Sensations at high pressure such as these are very exalted, and, arrived at after due preparation and training, are possibly the proper outcome of man's aspirations to be better than his fathers were; but in their train come a lot of fantastic and outrageous attendants—like their leaders—at high pressure. The motley routs have no thought of impressing their own forms on a dram-drinking, exhausted audience; but they seek for symbols that have been precious in the eyes and hearts of mankind, and propose by exaggeration and distortion to sting and pain us into perpetual reminder of themselves. I will give an instance of the extremely complicated way in which a manufacturer sets to work to impress upon your mind the name of the article he makes. We are all unhappily familiarised with the explosive statements,

pointless anecdotes, and catchpenny superlatives that cluster and swarm on everything we touch; and the example I select is as familiar as any, but a trifle more subtle in its brutality than the general run.

Over the west door of the church of San Salvadore, in the Borgo Ognissanti at Florence, is a lunette by one of the Della Robbias representing the Annunciation. Following the contour of the arch in which the plaque is set is a semicircle of winged cherubs, forming a kind of guardian chorus to both the Messenger and the Virgin. I have enlarged one of these heads, not because I thought it better than the others, or specially characteristic. It is one of the many hundred that the Della Robbias did, and though the pitch of excellence they reached was high, it was outdone by the greater men like Donatello, Verrocchio, and the later sculptors. I can take the head, then, as a sample of good art then current in Florence. I do not know what the warrant is for these winged heads in legend and tradition. In the Bible they are figures that are winged—not heads merely. But it is a beautiful fancy, and was most fondly used. Though not exclusively, they were represented chiefly clustered round the Madonna—clustered in a way so intimate that they count as more than ministers. It is as if the words, the deeds, the thoughts and sympathies of the Madonna had materialised themselves, and that in Heaven Love's Meinie became the divine incarnation of the human love and devotion she felt whilst on earth. Whatever of nestling Love there is on earth, and hoped to be hereafter, has been gathered up and fixed by your Italian sculptors in the guise of a cherub's head.

This lovely creation took a deep hold in all feeling hearts. When Sir Joshua Reynolds desired to add a crowning grace to the child's head that he had been studying, he added the suggestion of immortality to the face by the addition of the cherubs' wings, that the beauty which Nature could make, but could not make undying, might on his canvas record also the artist's sigh that in this world it is permitted such loveliness to decay.

And now look on this.*

There is no want of skill here. In mere technical ability I suppose it is equal to Della Robbia's head. It was meant to be startling, impudent, and shocking—and it is. In fact, it is more shocking than the cold-hearted beast who drew it can conceive, for his senses are too dulled to give him an inkling of the amount of pain his outrage can inflict. But observe what a complicated system this implies. A manufacturer procures an assassin to give you a foul blow, in the hopes that his violence may compel you to deal with him. His accursed trade-mark is to sear itself so deeply in your brain as to efface all other claims, and to leave you racked into a sort of dependence upon it. How can our architecture be simple if we behave so elaborately? If our architecture is to be worth anything it must express our mode of life.

We are, let us hope, at a measurable distance from the end of this present dissolute style, for dissolute it is. As long as the mouldings and the ornament further and explain the meaning of the design—are organic—all is well; just as in literature, and in the drama especially, as long as every epithet, explanation, and incident further the action of the piece, it is well; but every idle episode, everything that can savour in the least of redundancy, is bad art. Buildings, like the drama, should be pregnant—condensed—in their ornamentation. Simplicity in architecture means good art in architecture, and good art in architecture means perfect adaptation to the circumstances surrounding it. Good art is therefore pre-eminently practical. All this welter of indiscriminate ornament is not practical. There is no mind in it, and thought lies at the base of propriety. There is no fitness in it—for fitness requires

* Here the speaker exhibited a well-known soap-seller's advertisement, representing a winged monkey's head with a frying-pan in its mouth.

THE PHOTO. SPRAGUE & CO LONDON

HEAD, BY DELLA ROBBIA, IN GLAZED TERRA-COTTA

anxious consideration and weighing of the conditions which necessitate the feature. It requires but a moderate amount of reflection and observation to recognise how wofully unpractical our street architecture at the present moment is. In our tall narrow thoroughfares all the pomp and circumstance of cornice and pilaster is not only so much money thrown away by the architect, but so much discomfort and privation manufactured for the folk who throng the street, and so much tax on posterity for the maintenance of the miscreation. What architectural qualities are aimed at in these elaborate façades? Not proportion, for the exigencies of modern life have struck out a new set of proportions incompatible with the details of the date used. Richness? Yes, for the moment; but how short a time does it take to foul the broidery, and how far worse than plain clothes is soiled and tattered finery! Variety? Yes; but what occasion is there for this in the narrow frontage in a street full of independent and competitive designs?

Of breadth and restraint not a particle; and yet these and the attribute of colour are the only qualities that are of practical value in our streets. The comfort of colour, how great it is! It cheers, it protects and encourages. Our grim streets scowl down upon us till we feel like helpless orphans in the clutch of an Afrite. With colour, you do not need a protecting or constructed detail—colour obscures detail—but only broad spaces.

One should, of course, distinguish between private and public buildings. The simplicity that is called for in the one should give place to a harmony reached by more complex methods in the other, just as the simplicity of a citizen's life differs from the complicated equilibrium of our social system. As long as our methods of trading remain what they are, we must expect to see this riot of architectural features in our streets; it is our duty, as fellow-feeling citizens, to arrest and change these methods, and then in the future our streets will stand peacefully about us in sympathy with the quiet tenour of our lives.

II. By Basil Champneys, B.A.

I HAVE been asked to speak to you this evening on the subject of Simplicity in the Art of Architecture, and to do this specially with reference to churches and country-houses. I may say that the former and more general aspect of the subject is less difficult than the latter, for this reason, that the principle of simplicity appears to me to be universally applicable to all architectural art whatever, and that I am quite unable so to subdivide it as to say anything in general terms about one branch of the art which is not equally applicable to all the others. Still, I shall endeavour to make a special application of these general rules to the domains of art which have been suggested as my special subject.

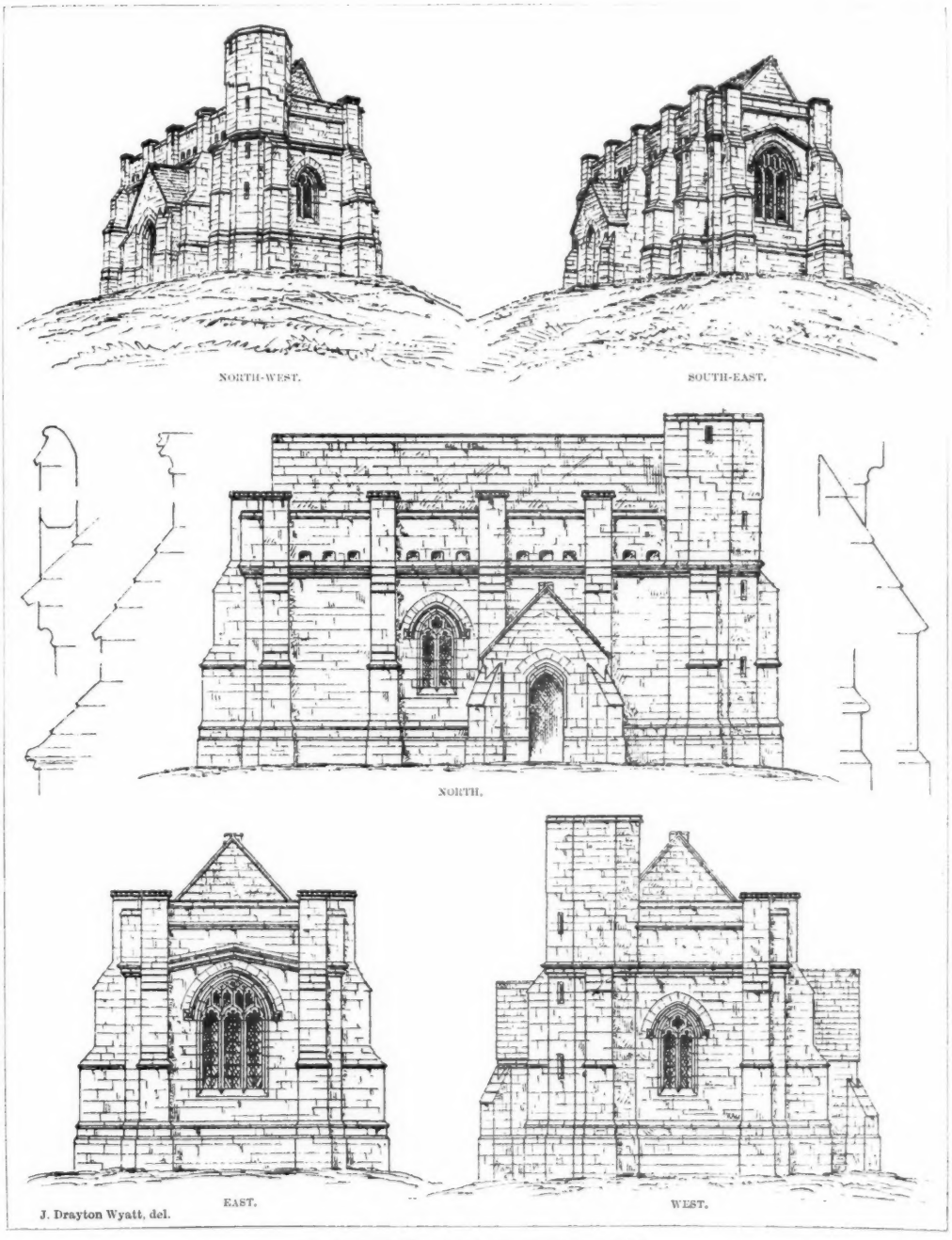
There are two positions which it is desirable that we should establish in the first instance: the one that simplicity is a note of the highest art everywhere and in all its branches; and the other that it is specially characteristic of the English genius. To take these in inverted order, I may say, first, that it has always appeared to me that the wider study of our English architecture leads to the conclusion that reticence has been as obviously a characteristic of the English in art as in manners. I admit that generalisations are always somewhat risky, and am aware that many examples might be quoted which seem to point in another direction; still, I am convinced that it is so in the main, and would quote as confirmation one or two examples in the history of English architecture which will at least illustrate, if they do not actually prove, my point. First, that in the fourteenth century, when foreign art was developing into the vagaries of the flamboyant in France and the neighbouring countries, and in Germany into a variety of ingenious extravagancies, in England the invention of the Perpen-

dicular held eccentricity in check, and resulted in work which varies as often in the direction of severity as of exuberance. A work such as the Chapel of King's College, Cambridge, with all its elaboration and extreme development of constructional art in its vaulting, is still essentially one of the simplest, as it is one of the grandest, of mediæval buildings. If such a work as Henry VII.'s chapel be quoted against me, I should answer that, beautiful as it is, it shows the note of decadence, and is evidence only of the exuberance into which art may run when the restraint of a wholesome traditional principle is removed. But, putting aside these more conspicuous examples, one can appeal with even greater confidence to what I may call the vernacular examples of ecclesiastical art, to the dignified modesty of thousands of village churches of no special fame, all of which, almost without exception, show unobtrusively some note of true inventiveness and some degree of poetic charm. The example of church architecture which I illustrate, one of many which might equally well have been chosen, shows how much dignity, character, and charm may be evinced in a work of the most modest proportions and aims. Those who care to analyse the means by which this result is reached will find that the strength of the design lies mainly in the subordination of every detail to the general conception, and that a reticent simplicity, rather than any display of inventive power, is its dominant note.

Or, again, if we look at the earliest introduction of classical influence into England, and its subsequent development here, I think that we shall not fail to find that as the process of assimilation progressed, so did simplicity gain upon exuberance, and that the sumptuous elaboration of, say, Burleigh passed, when brought into complete harmony with English tendencies, into such simpler forms as Chequers Court, the example illustrated, and thence into the type of modest manor-houses which everywhere evince the dignified reticence of truly English architecture.

But to return to the more general principle, it is essential to remove at once an idea which seems to me to be most unfortunately prevalent, namely, that simplicity in art is usually to be found in an inverse ratio to inventiveness. Such an idea is as dangerous as I am confident that it is false. So much so, that I believe that the exact opposite is essentially true, and that if Necessity is the mother of Invention, Simplicity may truly be said to be the daughter of Inventiveness. If my theory with regard to English architecture is true, this would in itself be almost sufficient to confute the heresy. It is inconceivable that the national genius which has produced a wealth of poetry such as may reasonably be held to balance in standard and in volume that which all that the rest of the world has afforded could have failed of invention in another sphere, and that its simplicity in art could have resulted from poverty of idea rather than from deliberate choice. It is, on the contrary, no paradox to say that extravagance is oftener a note of poverty than of wealth of inventive power. He whose ideas come readily and in obedience to the main conception of his work will be content to use them as servants to his predominant aim. When they are few and far between, he cannot afford to put them aside, however incongruous they may be; they become his masters, and the unity of his work has to suffer in the interests of their display. I venture to believe that all great artists, if they had studied their own mental processes, would be unanimous in saying that the main discipline of the artistic conscience has been, at least in early days, to refuse, and ruthlessly put aside, all imaginations not cognate to the central conception; that their duty has been to repress constantly, never to stimulate, the inventive power.

It is true that the discipline is a hard one at all times, and that it is especially difficult in our own day and in reference to our own art. Competition is keen, and the temptations to self-assertion or self-advertisement may be overwhelming. If, as too often happens, a young architect may have had to wait during many years of maturity for a chance of showing what



ST. CATHERINE'S CHAPEL, ABBOTSBURY, DORSET.

Reproduced on a diminished scale from THE BUILDING NEWS of 6th Aug. 1880.

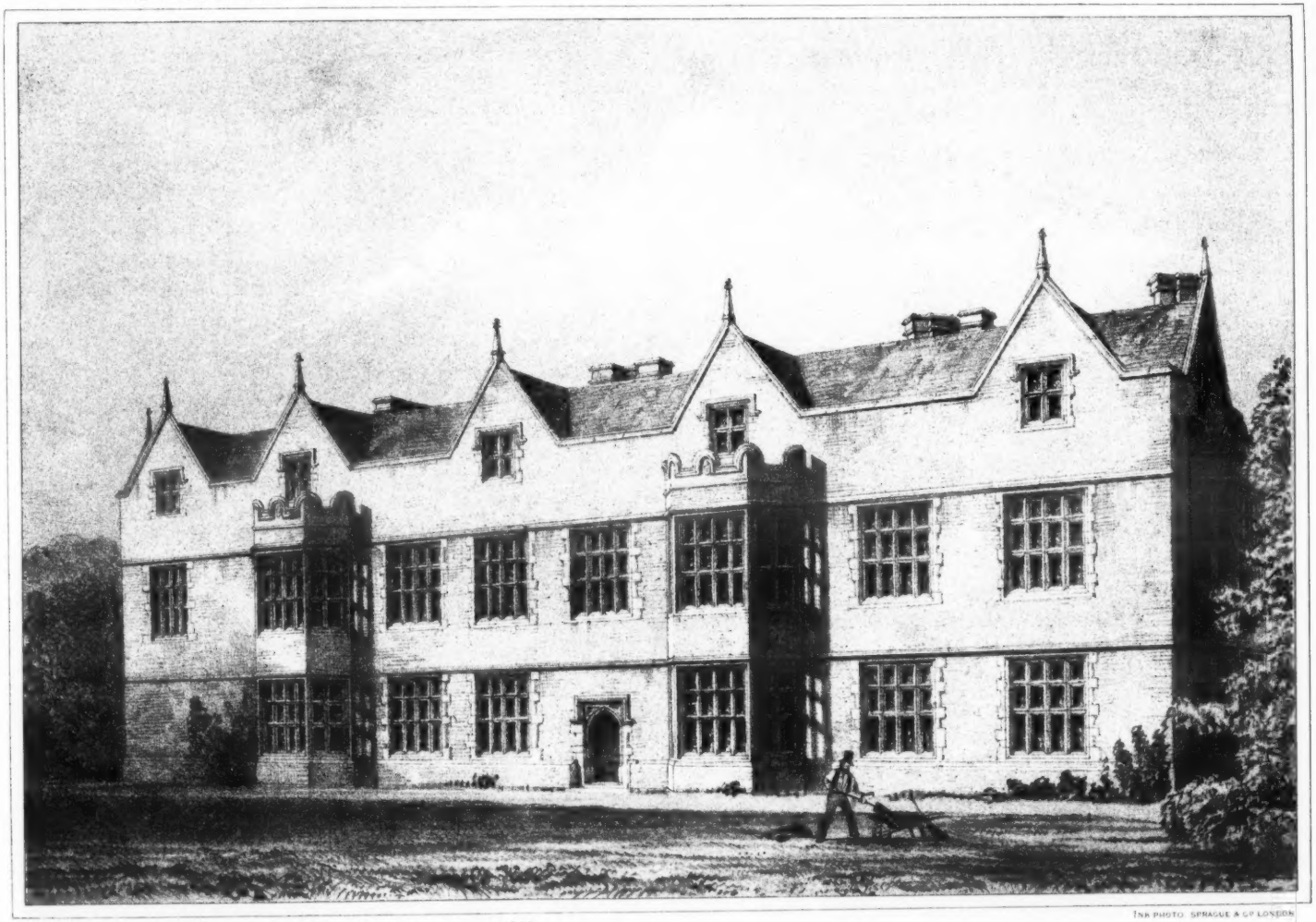
is in him—years during which he has been accumulating knowledge—it is no doubt hard to realise that a single opportunity can afford but a limited area for the display of what he may either know or evolve. Moreover, he can scarcely fail to realise that the age is not readily appreciative of the refinements of his art; that the more salient or striking design may, in public estimation, altogether overpower the more refined and reticent; and if he has to live by the public, it is no easy matter to disregard its preferences. Still, the principle is not compromised even though its application may be difficult; and from first to last the law holds good, that every building, to be a work of art, must originate in one central idea—what the French call the *idée mère*; that to this idea all that the inventive powers may evolve must be strictly subordinated, and that it is better to apparently fail in inventiveness than actually to fail in unity and keeping.

But there is another and closely cognate danger of no less import which threatens the artistic integrity of the architect. I mean the popular demand for so-called originality. This is perhaps the most dangerous influence against which the art of the time has to struggle; nor is it more noxious than absolutely unreasonable. For, in the first place, originality is not too easy either to define or to recognise. In the second place, true inventiveness is always unconscious; nor can any one by taking thought increase his originality one whit more than he can add a cubit to his stature. Demand is said by economists to create supply, but in the absence of the genuine article the demand may be met by adulteration. Some, indeed, actually prefer the adulterated article. We have heard of people of the "Gamp" type preferring oleomargarine to butter as having more "flaviour," and refusing filtered water because all the nourishment had been taken out of it. True originality is a growth of nature which needs no forcing-house, nor can its light be hidden under any bushel. Spurious originality is very easily produced; it often means nothing more than doing what has never been done before; and there may be very excellent reasons why it should never have been done before, nor ever be done again. It is quite open to any one to walk down Regent Street with one leg of his trousers blue and another yellow; but we shall scarcely applaud him for originality—rather put him into durance as a lunatic, and possibly a dangerous one.

There are various ways in which spurious originality may be achieved, and may, in an age of popular ignorance, pass muster for the genuine article. One is the forced and purposeless combination of different and incompatible styles in a single building. Such juxtaposition in an ancient building, where it notes the history, the gradual growth and development of the fabric, is valuable, interesting, and very often beautiful, and no Vandalism is more to be condemned than that which seeks to reduce such examples to a Procrustean standard of uniformity. In an obviously modern work, the artificial and enforced union must needs savour of affectation, the unmistakable note of spurious originality.

A second method is to seek out for imitation such strange and decadent phases of architecture as the past has evolved—phases valuable only in an archæological sense; such, too, as are especially easy to copy, decadent art being essentially *vitiis imitabile*—and to palm off the reproductions of such obsolete eccentricities as original invention.

Unity and beauty should be the sole aims of which the artist allows himself to be conscious. As for his originality he will never succeed in suppressing it if it is present, or in generating it if it is absent; so that he must leave that alone for ever. All this seems obvious enough—so obvious that I am almost ashamed to have dwelt on the point. Nevertheless, there is a tendency, evinced both in theory and in practice, to demand on the one hand, and to force on the other; the result of which, if not counteracted, will be to produce something as like the real thing as the contortions of a galvanised corpse are to the natural movements of an athlete.



From Studies of Ancient Domestic Architecture, by E B Lamb. London, 1846.

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CHEQUERS COURT, BUCKS

In this connection I may add that no one can dispense with the lessons taught by earlier architecture. These contain, when properly understood, the accumulated experience of ages. Moreover, no art has ever progressed by jerks; healthy progress has always been smooth, gradual, and tentatively modest; and if this is the case with other arts, it is especially true of architecture, which can never be largely divorced from precedent, and relies so largely for its effect on associated ideas. But, on the other hand, there will always be legitimate occasions for new departures, originating either in the modification of contemporary modes of life, or in new developments of construction; and as architecture is essentially based upon these, so from these will its variations be most healthily derived.

To recapitulate: I have maintained that beauty, conditioned by simplicity and unity—which are practically the same—should be the unique aim in architecture. But it may be well to show under what conditions and upon what methods these may best be obtained.

Style has been defined by someone as "having plenty to say." It would be more correct to say that one of the essential conditions for writing a good style is to have plenty of material; perhaps another condition may be not to try to say too much. It is a characteristic of the present day that there is an abundance of writers, both of poetry and prose, who say nothing in the most perfect manner. I was startled the other day in reading a criticism on Swift to find the critic saying that Swift had no style. I had always looked on him as a master of style. On thinking it over, it seemed to me that what the author meant was that the great writer had no mannerism—which is true. The matter was predominant in Swift's mind to the exclusion of any conscious thought as to the manner, which is on that very account the perfection of style. The other process, to consider the manner of expression so that the matter becomes a negligeable quantity, is to put the cart before the horse, or to try to make the cone stand on its point.

These remarks are not so irrelevant as they may seem, and have a very direct application to the question of architectural simplicity. Architecture, of all the arts, is the most firmly based on the practical. In the design of every building the primary problem is to fulfil certain definite practical requirements according to established constructional laws, and it is on the spirit in which such problems are met that style in architecture mainly depends. If they are met honestly and simply, the thing to be done being held primarily in view and sound laws of construction loyally obeyed, at least the conditions of good architecture are present. If, on the other hand, these practical problems are subordinated to ingenuities of plan or preciosity in elevation, if the construction is forced in the interests of the picturesque, then there is more than a probability that the result will be affected and unnatural; the manner will have taken precedence of the matter, the cart will have been put before the horse, the cone inverted. This danger seems to me to call for an especial warning in the present day, when everyone seems to expect on every occasion something new and striking, and when facilities of construction are infinitely capable of abuse.

Another evil which seems to be more or less prevalent is what may be called "sketch-book "architecture." I have seen within the last few years many designs, especially of country houses, which look to me as if the process had been to foist upon the practical scheme some picturesque effect which was in no degree native to it; and if this impression is produced, all true pleasure in the work, at least with those who understand the art, is necessarily excluded.

But I must, in conclusion, guard against one possible misconception. When I say that the simple and legitimate solution of the practical problem should take precedence of further development in the pursuit of beauty, I must hasten to add that this precedence must be a precedence in importance rather than in time. I have maintained that, in architecture, unity and simplicity are so closely allied as to be almost interchangeable terms. But the only

condition on which true and complete unity in architecture can be obtained is that the design shall have been originally conceived as one complete whole. This should seem too obvious to need assertion. Nevertheless, one often comes upon statements or proposals which seem to imply that a design may be taken to pieces, and that the elevation is to follow a plan previously and independently made. This is a dangerous heresy. A plan is a good plan if, fulfilling the primary practical requirements of the scheme, it involves by legitimate construction a building both internally and externally good. Plan, section, and elevation must be conceived at one time, and in their full connection one with another. None is before or after the other; none is greater or less than another. Unity of effect involves and implies unity of conception. Unity is the condition of simplicity, and simplicity is the predominant note of the greatest architectural art.

III. By the President, Francis C. Penrose, F.R.S.

THE complaint made, and not without reason, that we fail in simplicity in architecture, is probably very much connected with the eclectic phase of art in which we live; but there is no reason why, because we recognise a tendency to an error, we should not struggle against it. In an age of such varied and complicated wants as the present, the primitive simplicity of our Norman and Saxon ancestors cannot be maintained, nor would it be, to that extent, desirable. Every historic style of architecture has passed through the phases of its first uneducated dawn, then its meridian excellence, and thence has sunk into a more or less complete state of decadence. There has been a rude but grand kind of simplicity in the first period; then the well-ordered and chastened simplicity of the culminating stage, and invariably a loss of this quality at the close. The Egyptian and Greek styles do not controvert this law; but in these two it is not so easy to point out the full development. What may be called the childhood of Egyptian architecture has not yet been discovered, but we cannot doubt its having had existence; and the decadence of the Greek is too much mixed up with Roman influence to be quoted effectively in pointing the moral, unless we take our examples from Rome itself, and compare the works of Augustus with those of Hadrian and Diocletian. The same process was at work in the Italian revival of classical architecture. The buildings by Alberti, Brunellesco, Bramante, Peruzzi, and, indeed, all the earlier masters, are remarkable for their simplicity; but they were succeeded by the more complex works of Bernini and the turgid *barocco* of Boromini and the followers of the latter, who were void of the imagination which sometimes peeps through their master's extravagances. But it is the history of Mediæval architecture which best supplies all the links of the sequence. The early Romanesque and Norman styles, strong in the simplicity of youth, led to the full-developed Gothic of the thirteenth century—of which one of the characteristics that strikes us most is simplicity. Two centuries later we find that the French Gothic of Chartres had degenerated into the Flamboyant of Troyes; and the Westminster Abbey of our First Edward ends in the Tudor of Henry VII. But, nevertheless, in England at least, a resolute stand was in some very important instances made against the prevailing tendency to complication. Witness the works of William of Wykeham, in Winchester Cathedral and elsewhere, and of the architect, whoever he was, who built King's College Chapel, a building in which the essential characters of order and simplicity of form, both inside and out, have seldom been better displayed. A noble stand was also made against the degeneracy of the Renaissance in England by Inigo Jones and Sir Christopher Wren, and in France by Claude Perrault in the eastern front of the Louvre.

Besides these examples of stemming the adverse current, we have encouragement derived from the sequence of the works of nature. Consider the gradation which we find between the pendent violet and cowslip of spring, the severe concentric majesty of the summer rose, and the radiating flowers of autumn; but none of these, with all their variation of character, can we charge with want of simplicity. The examples and analogy above given ought to encourage us to feel assured that, even though a tendency adverse to simplicity has become prevalent, it is quite capable of being corrected. Let us, therefore, endeavour to establish the means by which it may be done. A prime essential is the rule that no particle of ornament, whether decoration be abundant or scanty, should be used without a definite aim. To carry this out, however, requires much time and determination applied in the initial stages of a design. A writer of eminence once apologised to a correspondent for the length of the letter he had written to him, because he had not time to write a shorter one; but it may be said in favour of the concentration of energy recommended that it can hardly fail to save time in the end.

An architect's studies may have led him to take particular notice of picturesque combinations, and his predilections may lie in that direction. It is possible that if the building on which he is engaged be very much limited in its site, with respect to the points of view from which it could be seen, he may be right in giving it an unsymmetrical elevation; but even then the quality of simplicity need not be entirely ignored. But the occasion I have supposed is comparatively rare, and our buildings are usually to be seen from more points than one; and it almost invariably happens that when a picturesque effect is chiefly aimed at, the changes of aspect will set it all wrong from most other points of view; whereas a well-balanced design is pleasing on all sides.

Let us first consider the advantage of a well-ordered and simple plan. One of the greatest charms in viewing a building arises from the exercise of the mind when the orthographic aspect is distorted by perspective in recovering the true shape or plan from the image presented to the eye. In a well-balanced architectural composition, this process can be gone through satisfactorily before the mind is fatigued by it. It should not, indeed, be so obvious that no amount of study need be given to it, otherwise the task would be too easy; but there should be no puzzling difficulty, and whatever amount of study may be requisite should arise, as in literature, from the amount of thought demanded by the matter, and not from involved manner.

Next, as to the quality of simplicity in the orthographic aspect (I need scarcely explain that orthography is only a long name for elevation), the first principle should be the expression of one central idea connected with the purpose of the building, and together with this the expression, not too rudely given, but with sufficient emphasis to satisfy the mind, of the main contrivances for the support of the superstructure; otherwise there may be as little pleasure in looking at the building as there would be at an oak of which the trunk and foot-roots are obscured by ornamental shrubs. It is true that, although there should be but one main effort, in a large structure there may, and ought to, be important subordinate compositions; but they should all have reference to the main idea, and by far the larger part of the ornamentation used should be grouped in connection with it. Some by-play may often very fitly be introduced here and there, to avoid too great severity, but always in subordination. In what direction this main effort should be directed must depend very much upon circumstances, especially the requirements of the plan and of the site. The leading apartments of the plan will almost in every case give the clue to the direction where the principal effort should be made; and if a building be in a street, its width or narrowness, or the opportunity of a view presented by a cross street, cannot but have much influence on the scheme of the ornamentation. In the country the conditions may be still more varied, but few considerations

can ever outweigh aspect. I need not enlarge upon the value imparted even to the simplest forms by sunshine, provided only that the shape and material be suitable.

I have been chiefly referring to the framework of a design, and not to the outward dress, involving such ornament as it should properly receive. It may be instructive to point out how very little some of the finest works of architecture owe to complexity of structure and ornament. The temple architecture of Greece, which had the maximum of studied form and the minimum of ornament, as we generally understand the term, preserved almost its primitive simplicity of treatment, with variations, however, of proportion and of detail, for about 700 years.

Of the Greek civil architecture we have, indeed, but one conspicuous example in sufficient integrity to be quoted; but fortunately it is one of the most famous and admired of them all—the Athenian Propylæa. In this building, so far as we know, there was no ornamental carving whatever; nothing beyond the studied lines of the architecture, combining large surfaces of plain wall, and the coloured decorations of the interior. In our own Gothic architecture there is no more beautiful tower than that of Magdalen College, Oxford; and this is almost severe in its simplicity. Our two noblest cathedral fronts, Lincoln and Peterborough, owe their imposing and beautiful effect to simple forms. Giotto's famous Campanile at Florence, although its surface is enriched with inlaid marbles, is simplicity itself as respects its architecture. In Tintern Abbey there is not one single enriched capital—indeed, scarcely any carved work of any kind—but it must have been, nevertheless, one of the most lovely specimens of its class, as it is almost peerless amongst ruins. Not but there are some examples of Mediæval building in which simplicity does not reign supreme. I have already referred to the French Flamboyant, to which class may be added most of the later German stump tracery architecture and the confused plateresque of Spain; but I may also mention the impression made upon me by the over-decoration of a building of a better time, a restoration certainly, but presumably a careful one. I refer to the Sainte-Chapelle at Paris. When I first saw this building, the new decorations were being executed, but had not advanced very far; and I saw with pleasure what had been done, and admired the noble framework of the architecture, but I remember that at that time the windows and the floor were quite plain. When next I saw the chapel all was complete; every part that could be painted or gilt was so elaborated, and the floor richly diapered with encaustic tiles. The effect then was overpoweringly oppressive, and I was glad to beat a hasty retreat. I cannot doubt that if three-quarters of the money spent upon the decoration of that building had been diverted to some other use, the effect would have been vastly better.

Turning again to Nature, we find the most distinct evidence of simplicity of aim combined with economy of decoration. How small is the flower compared with the stalk which carries it! How small are the more ornamental features, not only in man but in animals also, compared with the breadth of the simpler parts, which, however, have had quite as much care bestowed upon their structure and proportions! The exceptional ornamentation of certain birds and insects arises from variation of colour, and not from complication of form.

But to return to the architecture of our own day. We observe, with much disappointment, that many new buildings in London and in our great manufacturing towns—combined, as they often are, with much cleverness of detail—exhibit an extraordinary waste of ornament and confusion of general harmony. How refreshing it is, by way of contrast, for instance in the City, to come across one of Sir Christopher Wren's works, or one of the few remnants of Inigo Jones. Or, in a great provincial town, to find one of Professor Cockerell's branch banks, or an institution building by Sir Charles Barry, in which we can read at once the main intention of the building, contrived with a wise economy of ornament which convicts most of

the more pretentious edifices in the neighbourhood of waste of effort! The value of a plain wall of good material has been too much lost sight of, whilst the worthlessness of surface ornament, especially when obscured and disfigured by the atmosphere of our smoky towns, has not been sufficiently regarded.

Let us, then, take for granted the desire to work out a design in due simplicity. Different architects may easily have different ways of proceeding; the method which has occurred to me is something of the following nature. Having well thought out the capabilities of the plan, commence the elevation on quite a small scale—such, for instance, as the object would appear at a distance equal to ten or twelve times the height. On so small a scale none but the principal features would be distinct. Sketch these into shape before any enlargement of scale is thought of. Then adopt scales representing the building at nearer distances by steps until the scale is sufficiently large to exhibit roughly all the detail that may seem desirable. When this has been discussed and got into shape it will be desirable to leave the elevation alone for such interval as may be wanted to attend to some other of the requirements of the building, and then, with a fresh eye, return to the elevations and compare the last enlarged sketching with the first small scale drafts, and carefully consider whether in the subsequent elaboration the design has at all lost its primitive simplicity, and, if so, mercifully cut out all excrescences which may have caused such departure. And then, and not before—as advised by Sir Joshua Reynolds—is the time for looking over portfolios and books of reference to see how works which bear some analogy to the present proposal have been treated by others.

It has often been said that an architect should be original. At one time the demand was fairly justified—namely, when the more exactly the façade of a Greek temple could be domesticated amongst us, or, a little later, the arcade of a Gothic cathedral made to do somewhat analogous duty, the greater the achievement. These misdirections of energy have passed away, but the cry "Be original" still continues. Those who are stimulated to comply literally can only do so by the endeavour to introduce on their works some ill-founded novelties, which only add to confusion. There is, however, ample room for true originality by the exercise of the restraint and the condensation of thought referred to above; and there is ample scope for its exhibition by skilful planning and grouping, so that its merit may at once be evident to the thoughtful observer when comparing any such work with florid, unmeaning designs, of which we have so many, worthy of the speculative builder. A true critic may then be led to say, "This is the work of an Architect."

DISCUSSION OF THE FOREGOING PAPERS.

The President, Francis C. Penrose, F.R.S., in the Chair.

Mr. HOWARD INCE, who had been invited to speak at the Meeting, was unable to attend, but sent the following communication, which was read by Mr. Caröe:—

After the able Papers to which you will listen this evening, it may do no harm to be reminded—first, that simplicity is not by itself meritorious; and secondly, that simplicity is, after all, a relative term. If mere simplicity were meritorious, Gower Street itself might fairly lay claim to the virtue. What we really would achieve is a fine effect by apparently simple means—in fact, the evidence of a reserve of power, or, in other words, the exhibition of one of the most noble qualities, "restraint." Indeed, this might have been a more accurate word for the title of this discussion. Restraint implies a considerable power of design, a judicial calmness, self-reliance, and, above all, a determined resolve not to advertise or play to the gallery. A design which displays this quality is almost certain to be received without enthusiasm, and may even be jeered at; but compensation will come with time. The very absence of apparent effort soothes the excited nerves even of enthusiasts. The restfulness of quiet dignity gradually endears it, till it becomes a friend—that is, a sympathetic companion. Secondly, that simplicity is at best a relative term. Like beauty, it exists only by force of contrast. If a building is to show this quality, it must either be grouped with others which are flagrantly profuse and restless, or else must contain the foil within itself

by a determined enrichment and elaboration of one or more parts. There can be no doubt which of these methods is preferable. The power to produce extremely rich and elaborate design when required is essential to the attainment of simplicity. Just as the early Italian painters won many of their greatest triumphs through their training as goldsmiths and designers of goldsmiths' work, so a huge façade may gain in simplicity if its designer shall have carried elaboration to the limit of his power in some small monument or accessory. In the best Greek work, the cornice—in the best Byzantine and Gothic work, the doorway—was usually selected for especial enrichment, thereby to give emphasis to the reticence of the other parts. Whichever feature we moderns may select is probably immaterial. Its selection may depend on circumstances, but never on chance. The essential condition is, that one part be preferred, rather than that doors, windows, and wall-spaces should be equally elaborate. Compare for a minute the façade of the Certosa at Pavia with the façade of Como Cathedral. Perhaps the most virulent destroyer of simplicity in modern work is the "sunk panel." It is an architectural pimple. There are buildings over whose fair face it has broken out like a skin eruption. On his suburban dwelling, on his City office, and everywhere by the way, the citizen sees it spreading over all that he knows as architecture. In the worst cases it suppurates into a carved centre. Over the windows, under the windows, round the windows, and between the windows, it spreads its devastating course. It weakens plinths, it fusses friezes. It is the panacea of the mechanical draughtsman, the palladium of the speculating builder. It would be no unimportant step towards an increased simplicity, if we in this room not only abstained from this detestable "sunk panel" ourselves, but banded ourselves into a league for its suppression wherever possible.

Mr. H. H. STATHAM [*F.*] asked to be allowed to commence by proposing a vote of thanks to the President and to the two gentlemen, who they were all sorry to feel were not members of the Institute, who had contributed such excellent and thoughtful Papers upon a subject the consideration of which was very much called for at present, if they regarded the great majority of buildings which were hurried on at the present day, and the exuberance, as had been said, of ill-thought-out ornament characteristic of them, and which, he feared, was to some extent due to the increasing prevalence of the system of competition which almost inevitably led to the desire to produce a design that would attract attention before anything else. At the same time it was of no particular use that the one who opened a discussion should agree with everything that had been said, and although, as a matter of fact, he did agree with everything that had been said, he thought there were points where more was meant than met the ear, and he should like to suggest another side to the question. The more thoughtful minority of architects, or some of them, had taken lately, perhaps had been driven to, the opposite extreme from the florid architecture, and they were, he thought, rather in danger of drifting into what they might call the affectation of simplicity. He might give one or two instances, but he would ask, in the first place, were their critics altogether consistent with themselves? Streets in the form of the old Georgian street used to be considered dull. Now they were told that it was stupid to consider them dull. Mr. Ricardo had mentioned an instance in Lower Phillimore Place, where there was an example of much more sensible architecture than that newly built opposite. He (the speaker) would adduce another instance. He knew an old Georgian street in which there were red brick houses with no ornament of any kind, but a cement string carried from one end to the other, and, he believed, another little string above. An architect came, and he made a new front to one of those. He put on gables at the top; he put in a very big window with plaster decoration over it; and he was so anxious to get curves that he got a bow window in the ground floor by tucking the bow back to the inside of the walls. That was on the south side of Great George Street, and the architect was his friend Mr. Ricardo. He was not shocked by that in the least; on the contrary, he assured Mr. Ricardo that every time he went past it, it "contri-" buted to his mental health, power, and pleasure." Mr. Ricardo had put something very interesting and picturesque into what was a very dull street. But he (the speaker) did not quite understand how his friend's practice squared with his preaching. To come to the other point, as to the affectation of simplicity, he was talking one day to a gentleman who was one of what he might call the simple-minded architects, those who kept aloof from the tortuosities of the Institute, and who was complaining vastly of the vulgarity of contemporary architecture. Like Vivien in the *Idylls of the King*, he

> let his tongue
> Rage like a fire among the noblest names,

till at last he (the speaker) pulled him up and said, "My dear fellow, whose architecture *do* "you admire?" Then he mentioned one person, whom, as he (the speaker) did not want to be personal, he would call X. Y.—a man, however, whose name probably many present had hardly heard of, but he had discovered that to admire the buildings of X. Y. was one of the proofs of being among the truly elect. He (the speaker) had not seen any of that gentleman's buildings, although he knew his name, and he inquired where he could see one, and was told to go and look at a small house in a certain square. He went, and saw a

small semi-detached house of excellent brickwork —it was always refreshing to see excellent brickwork—but there was not one moulding or anything of what they usually called an architectural feature from top to bottom of the front, excepting a half brick projecting in a line to make the semblance of a string. It was, of course, very easy on those terms to avoid bad taste; but, instead of "simplicity in architecture," was not that rather simplicity without architecture? Another instance. Among the examples put up on the screens was a drawing of Newgate. It was a curious indication of the rate at which things had gone that about ten years ago he was giving a lecture—not to architects, but to a general audience—and he instanced Newgate as an example of expression in architecture, and a row of young architectural students at the top of the room began to laugh. Of course he went for them. "Yes," he said, "Dance was told to design a gaol, and he "made a building as like a gaol as possible. And "he was right." But surely it was only in that respect that Newgate could be admired as a simple building. They could not, he thought, have Newgate held up to them, because of its simplicity in architecture, as an example worth imitating for another building. As a prison it was admirable because it was so forbidding. One word as to what simplicity in architecture really meant. It had been hinted at most truly by Mr. Champneys, and he (the speaker) should quite agree with him, only he should add one word more to what Mr. Champneys had said, that unity and simplicity were so closely allied as to be almost interchangeable terms. They were; but, if they thought what that led to, they would see that it would allow for a very large amount of elaboration. It was a dictum of Sir Charles Barry (whom he ventured to think the greatest English architect since Wren) that he did not object to any amount of richness in a building provided it were consistently carried out. Two views of simplicity might be taken: in the first place as regarded the general design of a building, and in the second place as regarded the detail. With regard to the general design, they wanted to see it well balanced, and, in an important building, symmetrical, and not cut up into lines merely for the sake of producing what people called a picturesque skyline. In the case of detail, what was wanted was to have all the detail thoughtful, well designed, and proper to its place. Surely that was one reason for preferring what was called simplicity, because the designing of thoroughly ornamental detail was such a difficult thing, requiring so much thought; and one of the curses of the present day consisted in the amount of bad and thoughtless ornament put on, simply because the man wanted to put something there to attract attention, and did not know what else to put. But if they came to the case of a building where there had been time and the will to give thought to the whole of the ornament, they might go to any amount of richness and still be simple. Take the Taj Mahal in India. He called that, on Mr. Champneys's own principle, a simple building; it had got what he called the *idée mère*—everything was subordinate to the original idea. He was not sure that Henry VII.'s Chapel was not simple. A French friend of his, who was in London a year or two ago for the purpose of studying its architecture, had assured him that nothing he had seen in London had struck him as so beautiful as the interior of Henry VII.'s Chapel—he had visited it again and again. That was an indication that it had a power over men's minds. Its richness was consistent; it was, of course, the very extreme of elaboration; but still it might be claimed as one of the buildings which in its general idea was connected, logical, and therefore simple, and only elaborated in proper subordination to the general features. He thanked the President particularly for the most suggestive remarks he had made upon the mode of designing a building—to study it in block on a small scale first, and then study the details on a larger scale. All the younger architects present would do well to lay that to heart; it was a most useful suggestion which perhaps had not been sufficiently kept before the minds of people in designing.

MR. L. ALMA TADEMA [*H.A.*], R.A., said that it was only natural he should feel it an honour to second the vote of thanks; but he confessed that he felt rather like the ornament that was excessive in a building, because what right had he to speak to architects about architecture? The distinguished President of the Royal Academy did it so well that they had shown their appreciation of it in a very practical manner; but Sir Frederic Leighton was an exceptional man. True, he (the speaker) had painted architecture in his backgrounds, and had tried to build some backgrounds for future pictures of his own, and had enjoyed doing so mightily; but he would never try it again. Simplicity in architecture, he would suggest, was the same divine idea of simplicity which should govern all art. A work of art must look like one conception—must look as if it had been done easily—and what the President had quoted so happily of the Frenchman who said, "Excuse me, Sire, but my letter is so long because "I had so little time," conveyed the true meaning of what he wanted to say; because the more they, the architects, worked on their buildings, and the more he worked on his pictures, the more those wretched, useless ornaments were blotted out, and the more they brought to the front that quality which the Greeks, the great masters in art, possessed to such perfection. The President had pointed out—and they could not be grateful enough to him—that true note of art which lay in the execution and the quality of the line, in the

harmony of the proportions, in the intensity of the curve—as for instance the curve in the steps of the Parthenon. Therein lay the beauty of the design. Taking the Greek vase—which was so exact in its architectural forms and curves, so beautiful in its whole—there was a profusion of ornament, but the ornament, being painted, never interfered with that whole. And this seemed to him the great secret of Greek architecture—the ornaments being only lines and paintings, they never interfered with form. He might relate a little experience of his own. There was a small museum, now transferred elsewhere, in the Royal Academy of Antwerp, with a double staircase leading up to a gallery, and at the end of the gallery was the true entrance to the museum. Opposite there was a big niche, and in it a bust of Rubens—which was quite right. It was not a monument of architecture, but it was very pleasing. A wave of monumental painting came over Belgium, the Government devoted so much money to the purpose, and every artist of repute was offered a building to decorate. Nicaise de Keyser, then President of the Royal Academy, was asked to decorate the vestibule. He accepted, on condition that the galleries should be shut up, and that instead of the curves which gave quality to the architecture, there should be a wall, in order that his paintings might show to advantage. When his (the speaker's) master, Baron Leys, was asked to decorate a building, he wrote to the Minister of the Department: "If the architect has put a plain wall in order to "bring out the quality of his columns and mould-"ings, then I have no right to destroy that plain "wall which is the *modus operandi* of his design. "Give me, therefore, a square box—a room in the "Hôtel de Ville—and I, with an architectural "friend, will decorate it: he will do the architec-"ture, and I will do the painting." That led to the idea he desired to give expression to—that the simplicity of architecture was a quality of its harmony. The Greeks could not have architecture smothered with ornament—it was not possible. Would the moulding of a plinth in the Erechtheum have ever attained such refinement of form, if not intended to be placed on a plain wall? It was, of course, quite right to say that a building like Henry VII.'s Chapel was beautiful; that its ornament did not destroy the simplicity of its proportions; but, still, it reminded him a little of a Maori, who remained a beautiful man although he was tattooed. The great question was Proportion. Unity and Simplicity were synonymous with Beauty; they were, however, but the children of Proportion, which was the true source of Beauty. With regard to the cherubs Mr. Ricardo had spoken of so delightfully, he thought that the earliest winged cherubs were those in the Church of St. Sophia at Constantinople. They were usually seen with the Madonna, and he would suggest that they might represent the souls of the Innocents, and that this was the reason of their being without bodies. Mr. Champneys' idea with regard to the plan and section and elevation had pleased him very much. He had always considered these to be the Three Graces of architecture, which could not be separated. What was the use of a beautiful façade if the planning of a house were bad? He remembered when, as a youngster, he was in Brussels, there was in one of the boulevards a house elaborately carved in beautiful blue stone, and an Englishman, who wanted to come and live in Brussels, went to see the house, and asked the price of it. The landlord stated the price. "That "is too much," said the Englishman. "But," said the landlord, "look at the façade!" "Oh, yes, I "forgot that; I will take the house opposite!" In London the subject of colour was a question he had considered a great deal. In his own house, being a painter, he had played, of course, with colours; but London was a very difficult climate; everything went black and everything went to pieces. He had tried with tiles and had not succeeded; he had tried with paint, but it was ruined in one season. Therefore colour was a most difficult thing to deal with in London. As to the use of relief, they had been rightly reminded that the low relief, got impregnated with soot and obliterated, thus calling the high relief into undue prominence. London architects were indeed to be sympathised with. Simplicity was a beautiful thing if it led to more refined forms. Simplicity was one of the great laws of art; but no poverty—that was not art.

MR. H. W. PRIMROSE, C.B., C.S.I., said he had not come prepared to speak, but he had listened with the greatest interest to the discussion, and had been reminded of the old phrase, *Ars est celare artem*. In discussing the question of simplicity, it had occurred to him that they were unconsciously confusing the word "simplicity" with the word "artlessness," because artlessness was one thing and simplicity was another. Artlessness was at the bottom of the scale, simplicity at the top. It was what art finally arrived at in its highest development.

MR. WILLIAM YOUNG [*F.*] thought it a healthy sign for the Institute that it had given up one night to discuss the subject of simplicity in architecture. Although, looking round upon the architectural work of the day, they must acknowledge that there was no lack of honest endeavour after simplicity, yet they must admit that the majority of the work was characterised by recklessness, by faddishness, and an utter disregard of all the old principles on which architecture had been built up; but then that was simply a reflection of the current thought of the day. The great social evolution which was now going on at a rapid rate was characterised by the same principles which characterised our architecture. Before going further he would thank Mr. Alma Tadema for those last words of his—Simplicity—

but no poverty. It seemed to him that they were in want of a true definition of the word "simplicity." There had been several definitions given; Mr. Statham had given two, but they ought to arrive at some common understanding as to what they understood by the word "simplicity." He had two meanings of the word for two different kinds of simplicity at hand. There was first the simplicity, he might say, begotten by indifference out of ignorance, or, if they liked to call it, the simplicity by faddism out of conceit; and, on the other hand, there was the simplicity by deep study out of great skill. The one was the simplicity of Simple Simon; the other was the simplicity of Wisdom; and he presumed that throughout it was the simplicity of deep thought, of wisdom, that they strove for. That was no new element in architecture—it was no new light. Mr. Ricardo quoted Ruskin; but simplicity was not one of Ruskin's seven lamps, and it was the second lamp that he had omitted. But although it was not one of Ruskin's lamps, it was one of the lamps of architecture known to the old architects in the days of the ancient Greeks, and carried down to the present day. If they looked through all the great buildings of the past, from the Parthenon downwards, they would find that simplicity was the characteristic of them all. What he might call simplicity should not be confined to the elevations; it should also go to the plan. He had noticed that in most of their large public buildings, especially in recent times—and he might refer to some which took a first place in competition—the plan was characterised by great simplicity, but the elevation was generally characterised by an utter want of simplicity. In domestic buildings, again, they might look at the view of a building which was marked by extreme simplicity and was most attractive in its way; but if they looked at the plan they found it most intricate. It seemed to him that sometimes people spoiled the plan for the sake of simplicity in elevation; and if they had got a simple plan they spoiled it by intricate elevation. That led him to the thought that a certain amount of moderation should be observed in simplicity as in everything else. It might be that to arrive at true simplicity merely meant condensing, as had been said that evening; just in the same way, if they were writing an essay the thoughts flowed fast and free, and they filled page after page with a long essay; but a conscientious man would go through it and reduce one-half of the words, and, by so doing, make it more effective, and produce simplicity so far as the work was concerned. Well, simplicity in their designs might be got in the same way. It was not by drawing to a small scale and a big scale. As a practising architect, he would say they might draw to any scale on any piece of paper that came to hand. With regard to simplicity of design, when the design was completed it should be well thought over, and useless features weeded out. But that was not all—that was not true condensing; it was not only that they had to omit everything that was useless and everything that could be dispensed with, but they had also to add all that had been taken away to the proportion and composition of what was left. That principle of proportion and composition was one of the things that were little thought of in the present day. If they had to do a column, to be simple they must design it in the shape of a cigar. Simplicity might be carried too far, just as much as decoration might be carried too far. He had looked at buildings that were very simple, but carried out with such an effort—such forcible efforts—to appear simple as to become most objectionable to look at, if not irritating. Now, good architecture never became irritating. Simplicity was always modest; and if they went in for simplicity, it should be with all the results of extraordinary care and study, and not simplicity for simplicity's sake alone, but simplicity for the sake of Art and for the sake of Beauty. He believed still, as he believed when a young man, that simplicity would not enable one to produce a great design. Good work in architecture, as in anything else, could only be done by enthusiasm; but enthusiasm tempered by simplicity, and simplicity tempered by moderation.

Mr. WILLIAM WHITE [*F.*], F.S.A., said there was one element which seemed to have been lost sight of, and which he had always looked upon as of far greater consequence even than that of simplicity, although it might perhaps be said to embrace simplicity, and that was the element of repose. The element of repose in a building was that which had been the very staple of his own mind throughout his life, and that repose was subject to several conditions. One of these was proportion. There could be no doubt whatever that proportion was the one first and greatest element in architecture, and good proportion would give repose. In order that there might be repose in a building there should be no ornament such as to interfere with it, but rather to emphasise it.

Mr. E. R. ROBSON [*F.*], F.S.A., thought that after all they had heard about simplicity the idea might be better expressed in the mouth of an artist by the words "self-restraint," "reticence." He would rather see a careful exercise of their faculties of design (after having arrived at a good knowledge of architecture) than any attempt to reduce it to nothing but a dead wall, which would be the greatest simplicity of all. A building characterised by self-restraint suggested always a great deal more than it expressed; and a man who had the sense to produce buildings in that way would always produce an interesting building. He would wish to emphasise the profound truth of Mr. Alma Tadema's closing words—Simplicity if you like, but no poverty.

After a few words from the President, Mr. Basil Champneys briefly acknowledged the vote for himself and the authors of the other Papers, observing that it would have been better to have started by a universally admitted definition of what "simplicity" was, as perhaps its absence had been to some of them a little bit of a trap. Of course, they clearly did not intend that it should mean nothing but excessive plainness, and he should not himself mind exchanging the term for that of reticence, or restraint, or possibly for other terms tending in the same direction.

STYLE, INDIVIDUALITY, AND NATIONAL TRADITION.*

It seems to me that there is no subject which is more worthy of study, none which, studied aright and the knowledge thereby gained rightly applied, will conduce more to the true advancement of architecture than that of style. In individuality working through style lies the whole interest of architecture, regarded as a fine art. That these two—individuality and style—are not antagonistic, as some would hold, is surely shown by the great and notable work of the masters—of Peruzzi, for instance, or of Wren, or of Norman Shaw in our own day. And if the two be separated—as, of course, they may be—can there be any doubt that, of individuality dissevered from style, or style without individuality, in a dignified, serious, and permanent art such as is ours, the latter is the quality infinitely to be preferred? The whole thought of mankind is moulded by tradition; art has always lived in and by it; and of all the arts Architecture, inalienably bound up as it is with construction (which, despite the occasional introduction of new materials and methods, changes but little from age to age), is of necessity most ruled by its sway. The laws of nature are immutable, and if a space has to be covered in, an opening bridged, it can only be linteled or arched—there is no third way. Yet there be many who still say continually, "Who will show us any new "thing?" and by not a few it is held to be a reproach to the architects of this generation that they are unable to evolve a new style. I have already hinted that I do not think this thing probable or even possible. Let us look a little further into this matter—consider it historically; the history of the growth of new styles (now so called, but in their own time never thought of as new) will, I think, confirm us in our opinion.

The new styles, we shall find, arose from one of two causes: either from one or more nations with an indigenous and a living art being brought into close contact with another and a newer race, with instincts ready to seize and improve upon what was then first brought within its ken, or by an increase of scientific knowledge applied to the fulfilment of new requirements in a novel or improved system of construction. Of the first we have an example in the birth of the Greek style, from the quick reception and subtle modification characteristic of the race upon the architecture of Egypt, with, perhaps, collateral influence of Assyria and Persia. As to the second, the Tuscan arch may be said to have produced Roman, and eventually Romanesque, architecture; and the gradually-acquired knowledge of how to counteract thrust with thrust instead of with solid inertia, coupled with the new ritualistic requirements, and supported by the wealth and energy of the Mediæval Church—from those evolved, in the course of generations, the so-called Gothic style. I have taken these as examples; you will find that similar environments and influences have brought about the genesis of all the historic styles known to us.

Now, for us in this nineteenth century none of these conditions exist, nor are they at all likely to arise. To the early Greeks the art of Egypt came as a revelation, and produced the effect of such; but what revelation can come to us who know from books and newspapers all that has been or is in the arts and sciences in every remotest corner of the globe? The pointed arch and flying-buttress produce a new style; is the fireproof floor likely to do as much? The whole system of iron and steel construction might have been expected to bring about a new era, and was by some asserted to be on the point of doing so; but one, nay, two generations have passed without the expectation showing any signs of being fulfilled, unless the Crystal Palace and the Forth Bridge may rank as a style of architecture by themselves. The reason seems plain—the lintel and the cantilever are not new, but only the materials and methods by which they can be produced on so large a scale; and the new system of construction accordingly is readily assimilated by the style already existing.

Let us not, then, trouble ourselves about a new style; for if such is to come, which I think I have shown is not likely, it certainly will not come by one individual or another setting out to cudgel his brains towards its invention. Instead, I would strongly urge upon you the prolonged and thorough study and the complete mastery in principle and detail of one of the great styles of architecture. Most, if not all, of the bad architecture we see around us is due to the want of such study—buildings which bear upon their face evidence that they are the work of ill-educated men architecturally. Suggestions as to composition, ill-assorted varieties of windows, oddments, so to speak, of mouldings and ornaments picked up at random from this book or that, strung together without cohesion or congruity of style—such are the characteristics of many a city front or suburban villa. A correct

* Being a portion of Mr. Paterson's Presidential Address to the Glasgow Architectural Association this Session.

rendering of a past style, applied with thought to the solution of a modern problem, may be uninteresting (though there is no reason that it should be), but it will never be vulgar; and vulgarity and the fine arts have no communion. If it be asked which of the various styles should be particularly the object of study, the true reply, to my mind, would be that for the purpose already indicated—regarded, that is, as a means of architectural training merely, training in grasp, refinement, homogeneity of design—it does not matter much which style is selected; nor is it necessary that the student confine himself to one, provided that the main principles and the details of each are thoroughly mastered. The architectural student of to-day would certainly consider himself but poorly equipped with but one style in his portfolio; yet, with regard to actual work, why should it be necessary for the architect to work in more than one style, unless it be to supply an actual demand on the part of the public for such variety (which, in most cases, is doubtful) or, perhaps, for the purpose of gaining competitions, according to the supposed predilections of the assessor or committee in charge? We become so accustomed to the state of things prevailing in our own particular day that there is something startling in the thought that it is only within very recent times—from but a generation back, indeed—that it has been considered a right thing or desirable that a church should be in one style, a house in another, and a town-hall or exchange in a third. Leaving aside this question for the moment, however, if it be proposed to make a selection of one style, and that from the point of view not only of training but of present and prospective utility, there can be no question but that the Renaissance (a loose enough name, but one easily and widely understood) is likely to prove of most advantage, involving, of course, as its base and root a previous examination, after the manner of the great Renaissance artists, of the architecture of Greece and Rome. The general trend of design by which Renaissance—or free classic if you prefer to call it so—in one form or another has become the style of modern civilisation the world throughout must be patent to all. Since its inception nearly four hundred years ago—if, indeed, its first beginnings should not rather be traced to some of the earliest rock-hewn temples of the East—by its elasticity, its adaptability to modern requirements and constructional facilities, it has surely, if slowly, become the recognised medium for the architectural expression of the civilised world.

A remarkable exception to this steady progression was witnessed in the late Gothic revival in this country, which was, as we all know, a deliberate revolt from the prevailing tendency. A few years, and its rise and decline have become matters of history. In the conscious eclecticism of its origin might have been surely seen the certainty of its short-lived success; for architecture to have any vitality must be the free and natural expression of the thoughts, needs, and requirements of the time; and it is not in the power of any body of architects, however able, to impose upon society at large the necessity of "thinking back" six hundred years to discover how these requirements should be met. Yet be it noted in passing that by the mastery of the style selected many of the works produced under this influence have that permanent artistic value which I have already tried to show follows of necessity from a thorough knowledge and a discriminate use of any one phase of architecture. It does not lie within the compass of this Paper to trace the various concurrent courses which led to this remarkable development; but when we think of the greatness of the names associated with it, of Barry, Pugin, Scott, Street, and Burges, and of the entire failure to bring about the realisation of their expressed design—the establishment, namely, in this country of a phase of Mediæval art as the one channel through which all architectural thought should find expression—we may safely conclude that, having well nigh run its course, leaving behind it an undoubted influence for good in directness of thought, appreciation of beautiful and significant detail, and constructional honesty, it is not likely to be repeated. Church building is practically the only branch of present-day practice in which the active influence of the Gothic revival is still manifest, in a predilection in favour of churches in the pointed-arch style, which, in so far as it is a real sentiment, must still be met and responded to by architects. Whether this will have any continuance it is hard to say; though, when we think that it is only an historical accident, so to speak, that connects the spread of Christianity in Europe with the rise and apogee of Mediæval art; that the manner of Christian worship must adapt itself to the spread of education and other changes of modern times (witness the practical disappearance of the monastic orders with the need for the vast clergy-reserved choir in abbey and cathedral); and, further, that there is no necessary connection between the pointed arch and the religious sentiment, it would seem natural to suppose that this influence will pass away likewise, and that our sons after us will find it natural and well-becoming to worship God in a building more refined, maybe, and exalted, but of the same type of architecture as those devoted to mundane affairs. Of those buildings which I have seen, that which displayed, perhaps, most fully the religious sentiment was a Doric Greek temple converted to the uses of a Christian church. The Basilican type has an historical connection with the Catholic universal faith, closer even than the Mediæval cathedral. Nowhere do we find buildings more characterised by religious feeling than these, or the early Italian churches of Brunellesco planned on similar lines; and I for one hail with satisfaction the recently-announced intention of the Roman Catholics in this

country to revert to the earlier type in their new cathedral in London. The result, both as to the building itself and the influence it is likely to exert, will be looked forward to with interest; and in the hands of an artist like Mr. Bentley, whose work is too little known outside a limited circle of admirers, expectations, however high, are not likely to be disappointed.

With one of the expressed objects of the Gothic revivalists we should have every sympathy—their desire, namely, to have a *national* architecture. But have we any claim upon Gothic as an art peculiarly English? With the exception of its latest development in Perpendicular, surely history gives emphatic evidence to the contrary. On the other hand, in connection with the tendency for the Renaissance to become the architectural style of the world, are we doomed thereby to become enveloped in one prevailing and cosmopolitan monotony? By no means. In the originality of the individual we have one safeguard; in that of the nation, with racial and climatic influences of its own—forming tradition within tradition—we have another. The great styles, indeed—Classic, Gothic, Oriental—may be likened to wells of water, the gathering up of many wandering rivulets and distant springs; cleared as it were by a period of filtration and settlement, when, afresh distributed like irrigation waters through many diverging channels, they absorb an additional element in the character and complexion of the soils through which they pass. Look at the Renaissance as developed, for example (leaving out Italy as the fountain head), in France, Germany, Holland, England, and Scotland. It is the same style, yet how marked the national modifications, and this not only in the beginnings of the style, but even, if less defined (owing to tendencies to be spoken of later), in the present day, as a casual glance through the pages of *Academy Architecture* will show. In the other arts national sentiments and traditions are sufficient to cause this divergence; much more so in architecture, where, in addition to these, the varied character of the materials and methods of workmanship in the different countries of necessity heighten the contrast. That this is desirable from an artistic point of view we have already seen. Who so unpatriotic, then, as to throw over such influence in contributing, through the most permanent and most widely reaching of all the arts, to the evidence of his country's existence and individuality? Yet there is an undoubted tendency at the present time in the other direction, caused largely, no doubt, by the desire for originality at any price (though the reputation for it be gained only by being the first to filch a motive from some newly-discovered and remote territory), and ministered to by the publication from time to time of a book of jottings and details from this country or that, so that the future method of affixing a date to nineteenth-century work will be by consulting the publishing list of an architectural library. The main and ultimate aim of this Paper, the point to which I have been gradually leading up, if slowly and with many erratic excursions, is to deprecate and discourage, as far as in me lies, such practice. Granted a prevailing European and over-seas style of architecture (for such, it seems to me, is bound to characterise the future of the art), we in Scotland have had, and we may and should continue to have, a *national* type of that style. Who can deny that the Scottish nation has characteristics in the present day, as in the past, differentiating it not only from the peoples of the Continent, but from its sister-race across the border? Cautious yet pushing; logical, humorous, and imaginative, yet parsimonious, or at least averse to lavish display; enthusiastic, especially in its hero-worship, yet in matters of every-day life undemonstrative—such are some of the outstanding qualities of the people which did and still should find an echo in its architecture, did vanity and the desire for personal display of superior knowledge on the part of architects not intervene.

In the past, we find a marked distinction in the character of the ecclesiastical buildings of England and Scotland in pre-Reformation times, the more noteworthy from the fact that such work owed its origin almost exclusively to the monks, for whom nationality was merged in the order. The difference between the English mansion-house of the seventeenth century and the Scottish castle of the same period was not caused entirely (though to a considerable extent) by the comparative degree of settlement of the two countries; it was also a matter of external and racial influence and of the character of the peoples. The same difference is traceable a century later, and still is observable (despite the counter influence spoken of) in the work of the present day. Compare old Glasgow College with its contemporaries in Oxford or Cambridge, or one of the late Renaissance mansions in the South with Drumlanrig Castle, which, though built as late as the very end of the seventeenth century, and in a manner altogether removed from the fortified keep of the so-called "Scotch "baronial," is still entirely Scottish in character. And observe, the difference still exists in the ordinary every-day building, the farm-house or village street of the present time, where the architect, with his book-learning, does not interfere. Ugly these may be in their newness, but they are Scottish to the ridge and chimney-copes, friendly and homely to the folk who dwell in them, and to the landscape of mountain and stream amid which they grow. It is largely a matter of local materials and builders' traditional methods, but these things are the very salt of architecture as a living art. Why, then, throw them over in our town buildings, so that a street in Glasgow might as well be a street in Manchester, with a suggestion (somewhat distant) of Florence, or Seville, or Rotterdam to complete the medley? The Tower

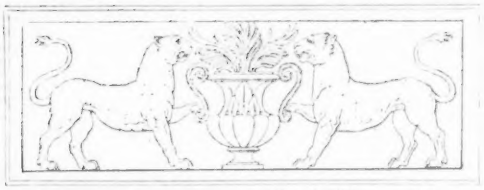
of Babel made, gradual and steady, its upward progress to the stars till the confusion of tongues fell upon the builders. In such evil plight is our modern architecture, especially in this country of Britain, so that an Englishman nowadays will be in turn French, Dutch, or Spanish, while a Scotchman, when he cannot be any of these, will at least be an Englishman! Lest there should be any doubt as to the foreign inspiration, even indigenous materials and methods are thrown aside, so that, with doubtful results as to comfort and durability, our modern suburban villas and fishers' cottages in Scotland, inspired by the half-timber work of the South, may become like restorations from Cheshire or Shropshire, torn from their natural surroundings and (granted a new birth in varnished red-pine instead of oak) set up in the North to look disconsolate and home-sick among their robuster brethren in stone. Forthwith the newspaper man, to show that he, too, has a smattering of the polyglot architectural, and wishful to extend his knowledge to the ignorant lay folk, describes such work as being in the "Swiss-châlet style." Why does almost every modern Scottish village church look hopelessly out of touch with its surroundings? Simply because the architect takes as his type the old English parish church, though since the days of John Knox the manner of worship and the whole cast of thought in matters religious have been entirely different in the two countries. The Disruption barn is not, perhaps, architectural, but it is at least in tone with its environing houses in country town or straggling village street; and, despite its bareness, savours of the Word preached within its walls. Is it not possible to take it as the type, and, while making our churches a real work of architecture, retain something of the local feeling and national Presbyterianism?

I would recommend, then, the study, not only of style, and particularly of the style of the Renaissance, but of our national Scottish development of that style. Do not imagine that I would have all our architecture, our warehouses and Exchanges, our cottages and mansions, modelled upon Crathes or Craigievar, Rowallan and Maybole, in the curiously named "Scotch-baronial" style, with rope mouldings, sham battlements and gun-ports, and turrets with "nae insides."* Such would only be the attitude of the Gothic revivalists exaggerated, and with the same fatal germ of eclecticism and "thinking back." The short life and early death of such a revival have already been seen in this country. I would have our national architecture studied in its later as well as its earlier developments, in such buildings as Heriot's Hospital, old Glasgow College, Drumlanrig, the later part of Falkland, and many smaller buildings of the late seventeenth and eighteenth centuries scattered throughout the country—studied in breadth and dignity, largeness of scale, simplicity of composition, and interesting sky-line, its concentration of ornament, and that of a varied and fanciful character. I would have the spirit of such work translated and made use of in carrying out, with all modern resources, the different architectural problems of our day. I would have the typical mouldings and ornaments preserved, but refined and corrected when need were by reference to their prototypes, with such characteristic features as the traditional construction of the skew in corbie steps, and the stone-corbelling, with the accompanying transitions from square to octagonal or circular forms in plan, made use of when occasion offered. It would accordingly be necessary, and above all things desirable, that the style should be studied, not as independent and self-centred (which it never was), but as the national phase of what is common to many countries. Hence, with our examination of Scottish work, we should combine the French and English which so strongly influenced it; the Italian, from which the first impetus sprang; and, through this last, the Roman and Greek prototypes of them all. Not that such knowledge should be applied in endeavouring to bring our architecture up to date (as I have seen it done) by piercing a tower of Scottish outline with pure *cinque-cento* windows, or adorning a corresponding gable with the early Italian shield with cherubs' heads and ribbons to match (decking, as it were, a kilted Highlander with a Roman scarf), but in rendering homogeneous and logical the whole, and in purifying and refining its features where the character of the building or its surroundings required it. I would further urge that we should employ home materials for the main masses at least of our buildings, in preference to outside and foreign ones; and that, when working in the country, we should find out and make use of the local characteristics as shown in farmhouse and cottage.

We need not fear that our work will become monotonous, lacking in variety or interest to ourselves, or the world in general. The Italian masters did not complain that they had but one style in which to design, and we do not find surely any lack of individual fancy in a series of works by, let us say, Bramante, Peruzzi, and Michelangelo. On the contrary, I cannot but think that our art, instead of losing, would gain in interest and variety, and in directness of appeal to all outside our ranks interested in architecture, from its closer connection with the country which nourishes us and with the early efforts of the men from whom we are sprung. A. N. PATERSON.

Glasgow, 31 *Jan.* 1895.

* The reference here is to a story current in Scotland of the owner of a brand-new Scotch-baronial mansion in progress, who, making his complaint to the clerk-of-works that he had in vain sought an entrance to a noble angle-turret with gun-ports and battlements complete, was thus answered: "Couldna get inside the turret, sir? Little "wunner at that [illegible] it has *nae insides*."—A. N. P.



9, Conduit Street, London, W., 14 *February* 1895.

CHRONICLE.

District Surveyors in London.

It will be remembered that at the General Meeting of the Institute held 3rd December 1894, when a discussion followed a Paper by Mr. Caröe [*F.*] on "The Recent Falling-off of Candi- "dates in the Statutory Examination for the Office "of District Surveyor," a Resolution was passed to the effect that the Meeting desired to see the high status of District Surveyors maintained, by permitting them to practise privately as heretofore, under such restrictions as might be thought necessary [p. 98]. This Resolution, duly communicated to the London County Council, has elicited an answer, addressed to the Secretary of the Institute, as follows :—

Spring Gardens, S.W., 18 *January* 1895.

Sir,—I have laid before the Building Act Committee of the Council your letter of the 20th December last expressing the desire of the Royal Institute of British Architects that District Surveyors should be allowed to take private practice, subject to necessary restrictions.

In reply I have been directed to inform you that this question has been most carefully considered by the Council on several occasions, and that the course now followed was only resolved upon after fully weighing the arguments on both sides. This being the case the Committee does not see its way to recommending the Council to reopen the matter.—I am, Sir, your obedient servant, H. DelaHooke, Clerk of the Council.

The reply does not touch upon the fact that recent legislation has imposed an increase of responsibility upon District Surveyors, although this formed part of the Resolution to which reference is made, and of which the London County Council were fully informed.

The Hungarian Architects and Engineers.

The Council of the Institute received, at their Meeting of the 11th inst., a most gratifying communication from Budapest, written in both Hungarian and English, on the triple subjects of the Congress held there last September, the reference to it in the President's Opening Address, and the recent election of two distinguished Hungarian architects as Hon. Corresponding Members. The English version of the communication, which is addressed to the general body of the Royal Institute of British Architects, is as follows :—

Gentlemen,—The Institute of Hungarian Engineers and Architects was highly pleased to hear of the honouring reception you were kind enough to bestow upon its Secretary during his stay in London, while the friendly words with which your worthy President remembered the Hungarian Technical College for having cordially received our English colleagues when taking part in the Budapest Congress of Hygiene and Demography did not fail to fill us with great satisfaction.

Our Committee, at their meeting of the 15th January, unanimously Resolved to vote the thanks of the Institute for your having elected our colleagues Aloïsius Hauszman and Emericus Steindl Honorary Corresponding Members respectively of your body, which distinction we consider, not only honourable to our said colleagues, but also to Hungarian Technical Science, as well as to Hungarian culture in general.

It is with high satisfaction that we take the pleasure of informing you of this Resolution of our Committee.

With the expression of our profound esteem, and with confraternal greetings, we have the honour to remain, Gentlemen, your obedient servants, The Institute of Hungarian Engineers and Architects. Gyozo Czigler, President; Kamill Fittler, Secretary.

The Budapest Congress was an eminently successful one, and it appears to have been highly appreciated by all the several nationalities represented at it. The report of the Delegates appointed by the Council will be found at page 16 of the current volume of the Journal, and the President s reference at page 3. In connection with the letter read to the Council last Monday, and given above, letters were also read from Professor Steindl and Professor Hauszman, of Budapest; from Monsieur Charles Buls, the Burgomaster of Brussels; Monsieur Edouard Naville, of Geneva; and Mr. Barr Ferree, of New York, acknowledging, in the most cordial manner, the receipt of their respective Certificates as Hon. Corresponding Members.

The Eighth General Meeting.

The Meeting of the 11th inst., which was under the management of the Art Standing Committee, and graced by the presence of several ladies, was remarkable for a Paper on "The Value of Sim- "plicity in Architecture," prepared by the President at very short notice, due to the fact that Mr. Alma Tadema [*H.A.*] preferred to make a speech rather than read a Paper, as he had first contemplated. The President's Paper was read by Mr. Caröe [*F.*], and the other two contributors were Mr. Basil Champneys and Mr. Halsey Ricardo. Prior to the delivery of the Papers, the Meeting was enlivened by a telegram from Mr. Walter Crane, to the effect that, though he could not attend it, the members might count him "against architectural confectionery and fidgety

"façades." The Papers, and a full report of the discussion of them, will be found on previous pages.

Birmingham, London, and the Unemployed.

Thoughtful men cannot fail to have been struck with the great speech delivered to an audience of about 5,000 persons by Mr. Chamberlain, the Member for a part of Birmingham, and whilom its distinguished Mayor, on the 6th inst., at Stepney, under the auspices of the London Municipal Society, of which Sir Horace Farquhar, Bart., L.C.C., is the President, and Mr. J. G. Hay Halkett the Secretary. Excellent as the whole speech was, nothing in it was more instructive than the description of what Birmingham has already done, or more suggestive than the method Mr. Chamberlain would adopt towards meeting the great difficulty of providing work, which should be remunerative to the employer, for the unemployed. Here is what Birmingham has done and does in the way of municipal improvement:—

> Birmingham is a town of 450,000 inhabitants—that is to say, it is about one-tenth the size and about one-tenth the population of this metropolis of ours. But in Birmingham the municipality is ever present; it is the active centre of all the public life of the town; its members are perpetually striving strenuously to promote the good, the happiness, and welfare of the whole population. We have in the centre of the town, within a convenient distance of the vast majority of the population, our great town-hall, where all the burgesses find their meeting-place upon great occasions of public interest. We have not got in Birmingham, when we hold a big meeting, to depend upon the kindness or hospitality of a private individual to find a meeting-place. The town-hall is flanked by a stately pile of magnificent buildings whose magnificence testifies to the importance and dignity of the work that is being carried on by the city council as trustees for the whole community. The city council are the directors of a great co-operative undertaking in which every citizen is a shareholder, and the dividends are payable in the better health, in the increased comfort, in the recreation, and in the happiness of the whole population. The mayor of the town is the first citizen of the town, and while he holds his office he is entitled to, and he receives, universal respect and honour from all the burgesses, and he is looked upon by them as their natural leader in all public and in all philanthropic questions. And what is the work which this council undertakes to do? It does all the work of your vestries; it does all the work which is done or which is proposed to be done by the County Council; and, in addition to that, it maintains, for the benefit of the people, an art gallery and two museums, the attendance at which in every year exceeds the number of persons who pass through the doors of the British Museum or the National Gallery. It has a great central library with 150,000 volumes, free and open to every member of the population. It has eight lending libraries scattered throughout the whole district, bringing the opportunity of education and recreation home to every citizen, and the issue from these lending libraries was, I believe, last year, something like one million volumes. It has five baths and washhouses; it has fourteen parks and recreation grounds; it has a technical school; it has a hospital for infectious diseases; it has the control and possession of the water-supply of the town; it has the control and possession of the gas-supply of the town. It has carried out an immense improvement scheme whereby a whole area and a whole district of the town has been reconstructed; and it holds now, on behalf of the burgesses, estates in the town itself which are worth, I should think, on a moderate estimate, two millions sterling. All this activity, all these possessions belong to 450,000 people; they belong to a district which is no larger than these Tower Hamlets in which I am speaking.

Mr. Chamberlain would do as much for the Imperial Capital; but without decentralisation of local government in the Metropolis he thinks it impossible. He would divide this province of houses containing five millions of souls into ten separate municipalities of 500,000 souls—in other words, ten Birminghams. He commended the municipal spirit of the Midland capital, the intense feeling, the interest shown there in such common undertakings as he had described. It was due to the sense of possession which the poorest shared with the richest, the sense that this was their property and not another's. Londoners, he said, would not know what municipal government was, what its capabilities and advantages were, until they had acquired a similar spirit and similar or greater results, not for the centre of London alone, but for every district which contained a population equal to that of Birmingham, throughout the Metropolis. He proceeded:—

> What are the two greatest of the unsolved problems of local life in London? They are the re-housing of the poor and the question of the unemployed, and I think also that these two questions are very closely connected. . . . The true remedy for the unemployed is to find work which will be remunerative in itself and which can be profitably undertaken. Remember this: it is no use finding work which is not wanted. If you establish, as some of our friends desire to do, municipal workshops to make things of which there is already too much production, you only glut the market, and for every man whom you employ in these municipal workshops you will turn out of employment another man who is already engaged in making the same article; therefore, I say, it is necessary that the work which you find for the unemployed should be new work, should be work that wants to be done, and should be work that can be done profitably. Now I do not know of any work that answers these conditions unless it be the work which can be undertaken in every district in London at the same time and in sufficient quantity—the work of reconstructing unhealthy areas and of re-housing the population. Nobody will deny the necessity of this work; nobody will say that it is not wanted, urgently wanted—the removal of congested districts in our midst, with all their attendant evils. They are not only a scandal, but they are a danger to public life and social order. This, then, is the work which is wanted.
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> My solution is that you should have, not in the centre of the town alone, but in all the outlying districts, great schemes of reconstruction and improvement. This is rather a serious proposal, and I have to ask your careful attention as I do not wish to be misunderstood. I set before you, as an alternative to anything that the County Council has done, as an alternative to mere street improvement, the reconstruction of areas. Now let me point out what that means. No small improvement—I do not care where it is made—can pay its way. If you run a street through a part of this district, and do nothing more, the whole cost of the street will fall upon you, and such benefit as there is will go to the surrounding districts. I defy you, however clever you may be, to draw up any scheme of

betterment which will materially improve your position. But if, on the contrary, you would take a great area, if you would take possession of the whole of it, and having got it, if you would treat it as a great landowner treats an estate—on business principles—if you would lay it out with big streets and side streets and open spaces, you may then let in light and air to a vast population, you may improve the condition of the whole district, you may increase the health of the whole community, and you can do all this at a cost which certainly will not be excessive upon the community. Now, that is a great proposition; that is a daring proposition; but it is made by one who knows something of what he is talking about. It is made by one who has carried out successfully a similar policy. When I was Mayor of Birmingham we had to deal with what you well know—with what you hear of constantly—what is technically described as an "unhealthy area." That means a group of houses or a street or two in which the conditions of life are unfit for human beings. In one case there were streets in which the death-rate was 70 per 1,000, the normal death-rate being only about 20 in the 1,000. If we had dealt with that district by itself, as the County Council deals in similar cases, we should have had the whole expense upon our shoulders, and it would have been a very great one, and we should have got no advantage except the improvement of the immediate district. But what we did was to buy all the land around it. We bought 70 acres of building land in Birmingham, covered with houses, and we set to work to reconstruct the whole of that district. And we have done it with such effect that not only have we reduced the death-rate, not only have we improved the general condition of the town, but we have made great thoroughfares which have increased the convenience and increased the trade of the town. We have done it, it is quite true, at a cost which, in the first instance, was considerable, but which every day tends to disappear, until in a short time it will have disappeared altogether, and before long, in the course of time, our Corporation of Birmingham will be the free and unencumbered owner of 70 acres of freehold land worth, perhaps, two millions sterling.

But the speaker maintained that this could not be done by any central body, such as the present Council for instance, because so large a body, having control of an enormous municipality, could not attend to details. "But if there were esta-"blished," said Mr. Chamberlain, "local councils "of authority and dignity, in all these great sepa-"rate districts—provinces I called them just now "—I believe that there would soon spring up a "competition in good work among them, and that "you would find numbers of such schemes initiated "and carried out; and in that case I think that "the problem of the unemployment of the work-"ing classes would soon be diminished and perhaps "disappear; and that, at any rate, you would find "work for those who are anxious to do work and "unable to get the opportunity." He further urged:—

I have spoken of great schemes in preference to small schemes, but one of my main reasons for urging them is that they would cost less, because, believe me, economy is at the very root of the efficiency of local government. Here is the County Council. In six years it has increased the average of the rate through London by 20 per cent., and there are people who know the finances of the County Council who tell you that if their policy is continued you must expect that that percentage will be doubled or trebled in the course of the next few years. Now there are some very foolish people who think that the rates of London are a bottomless purse into which they can put their hands and scatter gold without ever coming to an end. There never was a more profound mistake. You may do what you please; you may propose schemes of betterment, taxation of ground landlords—yes, you may do all that to the best of your ability; you may try to ruin the rich if you like. I am speaking perfectly seriously. I go as far as this, and I am putting an extreme case. You may try, if you like, to put all the taxation on the rich—you may try till you are black in the face, but you will not do it. Whatever you do, the pressure of taxation will ultimately and in the long run fall upon the poor. That is an economic truth. If you ruin the shopkeepers you will add to the army of the unemployed; if you raise the rents of workmen's houses you will increase the overcrowding and the congestion of which we complain; and, therefore, if you raise the rates, as sure as the night follows the day you will increase the evil which you are seeking to diminish.

Mr. Chamberlain, in the course of his speech, said, perhaps, many things which could not be agreeable to the majority of members of the London County Council, to whom, however, he gave the credit of being actuated by good intentions. In his opinion, municipal life is a question of infinite detail upon which the happiness of the population depends; and municipal councillors, instead of soaring into the highest regions of abstruse politics, ought, he thinks, to condescend even to visit individual houses, look after individual drains, supervise and control the sanitary administration of a great city. He has no faith in the direct employment of workmen by a County Council, and fears that it may lead, as has been the case in America, to paying them more than they could earn in ordinary employment. "If by this means, "or by any other means," he said, "you increase "the expenditure of your local authorities, if you "prevent them, therefore, from doing work as "cheaply as private individuals can do it, you "destroy the very reason for their existence; and "you make impossible the undertaking, or the "successful prosecution, of those great enterprises "which I desire to see undertaken." That Mr. Chamberlain's schemes of improvement, not to mention the references made in other parts of his speech to the London County Council, will not find favour with a large majority of that body goes without saying. Witness Mr. W. Wallace Bruce's attack, in *The Times* of the 12th inst., upon the proposal to buy up and reconstruct insanitary areas in and around Central London.

The Glasgow School of Art.

In continuation of a course which Mr. W. J. Anderson [*A.*] is giving at the Glasgow School of Art, adapted for students preparing for the Institute Examinations, a special lecture was delivered on Thursday the 31st ult., the subject being "The "Influence of Classic Architecture upon the Re-"naissance of Italy." Previous lectures having dealt with Greek and Roman styles of architecture, it was sought to define the limits of their influence upon the movement known as the Renaissance.

The early Florentine Renaissance buildings were, in their form and treatment, more affected by the preceding Romanesque and Italianised Gothic buildings than by any antique examples, and the revival in Florence partook as much of an Etruscan character as it did of Roman and Greek. Still more may the Gothic influence be traced in the early work of the Milan district, as, for example, in such buildings as the Certosa di Pavia, Como Cathedral, which are really transitional in character. But although the divergence in form and even in methods of treatment are not remarkable, the treatment of every detail was affected by study of classical art, and by an evident desire to get to the root principles of things. The result is seen in such exteriors as the school of St. Mark and the church of Santa Maria Miracoli in Venice. The classic influence was more powerful in the period immediately succeeding, when Bramante, Peruzzi, Sanmichele, and Sansovino produced works based on direct personal study of Roman buildings. In many of these the distinctive Roman system of combined construction was adopted, while in others the arch was eliminated, and an attempt made to attain to a Greek type of design. Palladio, Vignola, and Serlio went farther, and in their books at least reduced everything to a proportional formula; while Michelangelo and others seem to have rushed to an opposite extreme, and deviated from all law or decorum. The lecture, which occupied one hour and three-quarters in delivery, was illustrated by about eighty photographic slides, explaining the history of the revival in Italy from the fifteenth to the seventeenth century.

"Greek Studies."

A posthumous work, by Walter Pater, just published by Messrs. Macmillan & Co., is worthy the attention of those who read and discussed the Papers of last Monday. In the words of a recent reviewer of the book, few writers in our time have so keenly apprehended and applied that severe and ultimate rule of art, control—control of thought, control of style, control, above all, of that dynamic condition of the human mind which we call "imagination." This same "Imagination," wrote the late Mr. Pater, "is a Divine gift, as was the "Bacchic Vine; but each can intoxicate the "heedless, and so enslave where it should serve. "Therefore, I do not say with you that X. Z. is "great because of his magnificent imagination, "but because of his magnificently controlled "imagination." Thus, it would seem, even imagination, inspiration, genius, to be made practically useful, must undergo training—in other words, must follow some organised system of education. Indeed, Mr. Basil Champneys, in his excellent Paper, very happily supported Walter Pater when he said, in reference to the great artists of the past, that the main discipline of the artistic conscience had been to put aside all imaginations not cognate to the central conception—to repress constantly, never to stimulate, the inventive power.

Additions to the Library.

Verona, and other Lectures, by John Ruskin [London & Orpington: George Allen], has been received from the Publisher. *The London Building Act* 1894, with appendices, concise notes, and cross references, by W. R. Griffiths and F. W. Pember [London: Wm. Clowes & Sons, Ltd.]; *Stresses and Thrusts*, by G. A. T. Middleton [*A.*], being a text-book for students, and an enlarged edition of the same author's *Strains in Structures* [London: B. T. Batsford]; and *Lockwood's Builder's, Architect's, Contractor's, and Engineer's Price-book*, with a Supplement containing the London Building Act 1894, and edited by Francis T. W. Miller [*A.*] [London: Crosby Lockwood & Son], have all been received from their respective Publishers.

The Mausoleum at Halicarnassos, being an address delivered by Dr. A. S. Murray [*H.A.*] before the Glasgow Archæological Society, and now published from the *Transactions* of the Society in pamphlet form, has been presented by the Author. *The Cathedrals of France*, an article originally contributed to *The Cosmopolitan Magazine* for January 1895, by Mr. Barr Ferree [*Hon. Corr. M.*], having been issued in pamphlet form for private distribution, a copy has been received from the Author.

The *Proceedings* of the Royal Society (vol. lvii. Nos. 340, 341); *The Geographical Journal* (including the *Proceedings* of the Royal Geographical Society) (vol. v. No. 2); *The Yorkshire Archæological Journal* (part 51), containing among other papers a continuation of *Notes on Yorkshire Churches*, by the late Sir Stephen Glynne, Bart., and an illustrated Paper, *Mural Paintings in St. Peter's Church, Pickering*, by the Rev. G. H. Lightfoot; *The Journal and Transactions* of the Royal Photographic Society (vol. xix. No. 5); the *Transactions* of the Surveyors' Institution (vol. xxvii. part v.), containing a short Paper on The London Building Act 1894, by Henry Blackbourn, with Discussion; and the *Twentieth Annual Report* (1893–94) of the Yorkshire College, Leeds, have been presented.

The first six parts of *The Quantity Surveyor*, by Charles Henry Searle, "being a Treatise (pub-"lished in parts at 1*s.* 8*d.* each, post free) on the "most modern and approved methods of measur-"ing the various Artificers' Works in connection "with Buildings, drawing up Bills of Quantities, "and drafting Specifications and Contracts."

Neubauten und Concurrenzen in Oesterreich und Ungarn, edited by Herr Oskar Marmorek, is the title of an illustrated monthly periodical of architectural interest published in Vienna. The copies of the first and second issues (January and February), just received, promise well for the

future of Herr Marmorek's excellent architectural "monthly." The numbers already issued of the current (twelfth) volume of the *Deutsche Techniker-Zeitung*, of Berlin, have also been received from the publisher.

Epigraphia Indica of the Indian Archæological Survey (vol. ii. part xvi.) has been received from the Government of India. This part completes the second volume, and with its issue the arrangement for publication under Dr. Burgess [*H.A.*] terminates.

Mr. Mowbray A. Green [*A.*] has devised a new sort of form for architects' certificates, a book of which he has presented to the Institute. The advantages of Mr. Mowbray's certificate-form over others are (1) that the names of employer and contractor are placed on form and counterfoil, so as to avoid confusion; (2) that the receipt given in respect of the certificate is numbered by the architect at the time of making out the certificate; (3) that the whole is paged and indexed for the purpose of ready reference. Mr. Mowbray is further responsible for the arrangement of a form for Architects' Orders for Extras and Additions, a book of which he has also forwarded.

REVIEWS. XXI.

(62.)

THE INFLUENCE OF LITERATURE ON ARCHITECTURAL DEVELOPMENT.

* *Premiated Essays under mottoes "Craigside" (G. L. Sutcliffe [A.]), "Research" (J. Humphreys Jones [A.], B.A. Lond.), and "Ye Skeptic" (Alfred C. Houston [A.], Ashpitel Prizeman 1892).**

I have read with interest and pleasure the three essays sent in under the mottoes "Craigside," "Research," and "Ye Skeptic." They approach the subject in three different ways. The author of "Research" treats literature as the expression of national feeling, and then proceeds to enquire how far such feeling has been reflected in architecture. The writer of "Craigside" has carried his investigation into detail, and traces the influence upon architecture of the several kinds of literature, which he enumerates as religious, poetic, and romantic—the literature of emotion—and historical, scientific, and philosophical—the literature of thought. "Ye Skeptic" falls foul somewhat of the title proposed for an essay, partly on the grounds that literature is without influence upon architecture, partly—and there seems to be some confusion of thought here—because such influence must be for the bad. In fact, he regards his work as "an excursion into the pathology or "morbid anatomy of architecture." For all that, he has written in a vivacious and well-informed manner.

It seems to me that the successful treatment of the prescribed subject makes at least two leading demands. On the one hand, there should be the attempt to ascertain the test, or tests, by which we are to measure the influence in question. And, on the other, the standards which have been so arrived at should be applied to one or two select periods.

It is impossible within the limits of a single essay to trace out the connection of architecture and literature for the last twenty-five centuries. This, indeed, has been attempted, and, considering the difficulty of his task, not without success, by "Research." "Craigside," who shows considerable learning, and has consulted the best authorities, is even more ambitious. He has written a summary of literary history under his six selected heads. It is one of the merits of "Ye Skeptic" that he has confined himself within narrower limits.

If we turn to the other part of the subject as I have ventured to divide it, the enquiry, namely, how the influence of literature upon architecture may be assessed, the opening portion of "Research's" essay appears to me to be most successful. He treats the art of building as one among the several modes by which a national spirit may find expression, and tries to show how the causes which have led to the rise of literature, in the strict sense of the word, have tended to change the functions performed by architecture.

What are the influences which determine the development of architecture, and how far does literature play a part among them? Before we can answer this question we ought to be quite clear as to the meaning we attach to our words. When we speak of architecture, do we include painting and sculpture, so far as they are subsidiary to it? Much of the enthusiasm which is aroused by fine buildings is due to the combination of these three arts. Nay, the further question at once arises—Is architecture, as an art, subsidiary to sculpture? Although this last question is rarely answered in the affirmative, yet the fact that it can be put should at least give us pause. At any rate, we may admit at once that the architecture of certain periods, and these the most brilliant, cannot be understood apart from the contemporary sculpture and painting. For example, "Ye Skeptic" makes a vigorous attack upon the Greek revival which took place in the early part of the present century. But he omits the most damaging count of the indictment which might be brought against it. The Greek styles, and pre-eminently the Doric, are designed with a view to colour decoration. This was applied to the finest materials. The visitor to the Acropolis sees scattered about the inner approach to the Propylæa the white marble fragments of the roof,

* The Essay sent in under motto "Bid me Discourse," the work of Mr. A. T. Bolton [*A.*], *Soane Medallist* 1893, to whom was awarded the Institute Silver Medal (Essays) and twenty-five guineas for the current year, will be published in a future issue.

with the traces of colour decoration still visible. Thus the beautiful marble of Pentelicus was thought to gain by the use of colour. In the light of this universal use of colour by the Greek architects it is impossible to feel in sympathy even with the best works of the English revival; the repellent air which such works seem to have is due to this breach of the true rules of the style. Further, the finest Greek buildings seem to have been designed with a special view to the reception of paintings. We can still trace in the temple of Zeus at Olympia the slabs employed to receive the paintings of Panænus.

It appears, therefore, that colour ornaments, and even paintings, are an integral part of the finest Greek architecture. As it happens, the technique of the masters contemporary with Phidias was of a simple character owing to imperfect acquaintance with perspective, and we can gain sufficient idea of their work from sculpture reliefs and vase paintings. If Greek architecture cannot be understood apart from colour decoration and painting, still less can it be understood apart from sculpture. In studying Greek work it is impossible to dissociate the buildings from the sculptures employed to give them meaning. The Greek who visited the Acropolis was less struck by the elaborate sculpture of the Parthenon than by the fact that the pediments of the Propylæa were left without it. If we enquire into the subjects represented upon the buildings, we find that they were drawn from the general mass of popular tradition, and in most instances stood in close connection with local legends. Here, then, we have a point of contact between architecture in the widest sense and literature. The Parthenon was the frame, so to speak, for a picture, or rather gallery of pictures, in marble; but it was more than this. The uses to which the building was put interpreted the sculpture which adorned the pediments and the frieze. There was thus a vital relation between the building itself and its ornaments.

Let us now take the Greek practice as a clue to guide us, and resume our enquiry. We gain a stronger feeling of the unity of the arts; we find the same subjects treated more or less in the same spirit on paintings, sculptured reliefs, painted vases, and we are reminded over and over again of the same subjects as treated by the poets. Yet each artist in his own kind works at his task in the method of his school. There is no attempt on the part of the public to interfere in the procedure of the artist. His task is indicated to him, but he carries it out in his own way. Pericles was the moving spirit in the erection of the great buildings of the Acropolis, but he left the artistic direction to Phidias. Hence the influence of literature upon Greek architecture was very indirect at its best period.

If we pass from the age of Pericles to the practice of the present, we are at once struck by the greater complexity of the work demanded from the modern architect. The different problems of planning and construction can only be solved in many cases by a great mental effort involving capacities of a special order. Hence we cannot expect the architect to be skilled in collateral arts; at least to the same extent as before modern times. The public taste and the practice of English architects have broken away from the use of colour, and are only now returning to it in any considerable amount. The neglect of colour decoration may be put down with some justice to the effect of literature. Travellers have spoken of the purity of effect which the white columns of southern temples possess even in their ruin. And people who desired to keep close to the spirit of the antique work have treated the use of colour as a deviation from their adopted standard. Hence our dismal classical productions. That sculpture, again, is so little appreciated in England is an inheritance from the Puritan revolution. So far as that was the outcome of literature in any of its forms, we must attribute to literature a harmful effect upon the state of architecture. If, on the other hand, we sought a positive characteristic of the best modern work, we might find it in its striving after the picturesque, taking the word in its proper meaning. The distribution of masses and of openings, so as to produce certain effects of relief and of shadow, is to use the resources of building in the manner of a painter. In England, at any rate, it has been a literary influence that has determined the tendency of architecture in this direction.

Nottingham. FRANK GRANGER, D.Litt.

(63.)

THE CORPORATION OF LONDON AND ITS PUBLIC WORKS.

History of the Tower Bridge and of other Bridges over the Thames built by the Corporation of London. Including an Account of the Bridge House Trust from the Twelfth Century, based on the Records of the Bridge House Estates Committee. By Charles Welch, F.S.A., Librarian to the Corporation of London. With a description of the Tower Bridge by J. Wolfe Barry, C.B., M.Inst.C.E., Engineer of the Bridge; and an Introduction by the Rev. Canon Benham, B.D., F.S.A. Prepared under the direction of the Bridge House Estates Committee. 4o. *Lond.* 1894. *Price* 25*s. net.* [*Messrs. Smith, Elder & Co., Waterloo Place, London.*]

When the Corporation of London comes forth as an author, great expectations are naturally aroused. If we do not as a rule go in for very big things in this country, the Corporation of London is our grand exception, and has always been distinguished for liking to have "everything "handsome about it." Therefore it is hardly necessary to say that this book, compiled and produced under the immediate auspices of the City, is thoroughly sumptuous in character, and

that nothing has been spared for its embellishment—at least in the way of large print, thick paper, wide margins, and numerous illustrations. So lavish, indeed, are its producers that they have put very much more into their book than the most exacting of readers could have expected from its chief title. We look for an account of the Tower Bridge, and we find that all that can be collected about the structure in question occupies less than a quarter of the volume, all the rest being purely works of supererogation. The actual description of the design and construction of the bridge by Mr. J. Wolfe Barry is clearly written and satisfactory enough, but it cannot be said to add anything of importance to the information on the same subject which we already possess, notably in the two works—one of them by Mr. Barry himself—published last year, and reviewed in the JOURNAL * by Mr. Paul Waterhouse. Mr. Barry's paper forms a sort of kernel around which civic wisdom has wrapped, as though to enshrine it in a permanent and gorgeous covering, innumerable layers of quite extraneous matter, varied and diverse in quality and texture, and forming altogether a most wonderful miscellany.

As to composition, it is difficult to say what is *not* included, either by way of introduction or supplement to the main article; but one argument pervades and gives unity to the whole mass—the theme of the greatness of the Corporation of London and the surpassing magnificence of its public works, and more especially of all those lately completed. Mingled with, but rather lost in, this flood of eulogies, a diligent reader may pick out a good many bits of solid historical and archæological matter relating to Old London Bridge, the Bridge House Trust, and other City antiquities. Some of these compilations are well done and interesting in themselves, but they all seem quite inappropriately introduced here; for, jarring strangely and painfully with the general impressions produced by these reminiscences, there runs through far too much of the book the smug, self-complacent spirit of the typical town councillor or vestryman, gloating over every "modern "improvement"—more especially when a demolition—and perpetually congratulating himself on being altogether such a superior being to any of his poor, benighted forefathers. However, a grand drawing-room-table-ornament book has been produced, and there is certainly a fine bold air, a magnificent assumption, about this volume which distinguishes it above others; and, indeed, rather takes one's breath away. The notion of bringing in half-contemptuous descriptions of Old London Bridge, and mediæval London in general, by way of foil to the Tower Bridge, for the greater glory of the latter, has about it something of the sublime; there would be nothing surprising now in seeing an account of the Westminster Aquarium swelled out by incidental notices of the neighbouring Abbey and Palace, or a description of the marbles of the British Museum forming a preamble to an essay on the Griffin of Temple Bar.

ARTHUR S. FLOWER.

* Vol. I. Third Series, p. 562.

NOTES, QUERIES, AND REPLIES.

COMPETITIONS.

Clauses of Two Recent Sets of Conditions.

The Conditions of a competition between architects, promoted by the county borough of West Ham, for a Technical Institute and Public Library, have attracted attention from the liberal spirit in which they are put forth and from the preciseness of their general tenour, Mr. Macvicar Anderson being the assessor. Another competition, promoted by the Aston Union, Birmingham, for Cottage Homes, is conspicuous by the clearness of the Conditions imposed upon competitors—no professional assessor having yet been appointed to advise the promoters, the right to do which they reserve. Extracts of important clauses from both papers here follow:—

The West Ham Competition.

The plans to have flat tints indicating the floor areas, &c.; the walls, both in plans and sections, to be coloured red, and the elevations and perspective to be in pen and ink without any tint or colour. The dimensions of the principal rooms to be figured on the plans, and their heights on the sections. The drawings to be on sheets of white paper, of uniform size, mounted on plain stretchers, without frames or borders, the stretchers being covered with the drawings.

Each competitor is to submit one design only; and no alternative design, or alternative treatments of parts of the design, will be allowed.

The floors throughout to be of fire-proof construction. The system of warming and ventilating the whole building to be indicated on the drawings as far as practicable, and to be fully described in the report which is to accompany each design.

The total cost of the building is not to exceed £40,000. Any design the probable cost of which is adjudged by the assessor to be likely to materially exceed that sum will be set aside.

Each set of drawings to be accompanied by a report giving a general description of the design and of the materials proposed to be employed, as well as of the suggested schemes of warming, ventilation, and sanitation. The report to comprise an estimate of the sum for which the building can be completed, the cubic areas, and the rate per foot cube at which they are priced being stated. The estimate is to include library and other fittings, and every branch of work, except such fittings as are in the nature of furniture.

In the event of the estimate of the successful competitor being materially exceeded by tenders from approved builders, the Council reserves to itself the right to set aside the selected design, and the author in such case to have no claim beyond the amount of the premium which may have been awarded to him.

Three premiums of £250, £150, and £100 to be paid to those competitors whose designs are respectively placed first, second, and third in point of merit by the assessor. The competitor to whom the first premium of

£250 is awarded, to be employed as the architect, and he shall be paid for his services in accordance with the Schedule of Professional Practice and Charges of architects, published by the Royal Institute of British Architects, such payment being independent of the premium of £250.

The following will be deemed by the assessor to be grounds for disqualification, viz. :—

(*a*) Any attempt on the part of a competitor to make known his identity, or to influence the decision personally, or through any member of the Council, or otherwise.

(*b*) The delivery of a design after the specified date, unless arising from accident in transmission, satisfactorily explained.

(*c*) Any encroachment beyond the building limitations of the site [as laid down in an accompanying plan].

(*d*) Non-compliance with the conditions as to the drawings, as to number, scale, and style of execution.

(*e*) Material excess in cost beyond [£40,000] the sum named.

(*f*) Departure from or non-compliance with any of the conditions embodied in the foregoing instructions, the whole of which will be rigidly adhered to and enforced.

The Aston Union Competition.

The Architect who sends in the plans and specifications deemed best by the Guardians, and selected by them, shall be appointed Architect for the buildings contracted to be erected and erected, or shall, as the Guardians in their sole discretion may determine, instead of being so appointed, be awarded the sum of £70 for his plans and specifications, such plans and specifications to be retained by the Guardians, and to become their absolute property for adoption or otherwise.

The commission of the Architect whose plans are selected as best, if he be appointed to carry out the work, shall be at the rate of 5 per cent. upon the cost of the buildings erected, with the exception of the cottages of each size after the first pair, upon the cost of which $2\frac{1}{2}$ per cent. shall be the rate of commission, and this payment shall be the entire one in return for the plans and specifications, the superintendence of the erection of the buildings, and the carrying out generally of the works to be executed.

If the lowest tender to do the work according to the selected plans and specifications from a builder or builders whom the Guardians deem substantial or suitable shall exceed by 10 per cent. or more the estimate of the architect, the Guardians shall have the power to reject these plans and specifications, although they have been provisionally accepted, and to select and adopt those of some other architect in their place.

The Guardians may appoint a building surveyor or arrange with the successful competitor for the preparation of bills of quantities, but if they take the latter course the charge is not to exceed $1\frac{1}{2}$ per cent. on the cost of the buildings erected.

The Architect who sends in the plans and specifications considered by the Guardians as second best, and selected by them, shall be awarded the sum of £30, such plans and specifications to be retained by the Guardians and to become their absolute property for adoption or otherwise.

The Guardians reserve to themselves the right to engage an Architect or Surveyor to advise them with respect to any points that may arise in the selection of plans, but the selection will rest with the Guardians themselves.

The Guardians shall not be bound to select and accept any set of plans and specifications, and if they do accept any, the acceptance will be subject to the approval of the Local Government Board.

The drawings shall include a block plan showing all the buildings and drawn to a scale of 50 feet to 1 inch, also plans and elevations with any necessary sections of each separate building, drawn to a scale of 8 feet to 1 inch. Perspective drawings and coloured elevations shall not be sent in.

A written explanation must accompany the plans, but this, as well as the specifications, must not be in the architect's own handwriting.

The buildings to be shown on the plans must not entail any unnecessary expenditure in ornamentation or otherwise, but must be of the best materials and construction, and of such materials and design as to properly harmonise with the present workhouse buildings.

It may be interesting to note that, in both instances, the promoters decline to accept coloured elevations, and those of the Aston Union competition refuse to allow perspective drawings to be even sent in. In the latter instance a clause in the Conditions, that "any alterations whatsoever "of any plans or specifications required to be "made, either before the commencement of the "work or during its progress, by the Guardians "or the Local Government Board shall be made "by the Architect appointed, without any addi-"tional charge," seems extraordinary, seeing that no limit is set to the extent of such alterations; but, possibly, in practice the extra labour and time involved would be infinitesimal.

Thomas Sandby, R.A., and Inspiration [p. 224].

From W. D. Caröe [*F.*], M.A.Cantab., F.S.A.—

Mr. Street's review of *Thomas and Paul Sandby, Royal Academicians*, and the further notice upon Thomas Sandby, R.A., form not only interesting, but instructive reading, deserving of attention in these days of much discussion upon educational systems.

As Mr. Street implies in his question, "Where "did Vanbrugh pick up his architectural know-"ledge?" it is remarkable, considering the records of his training, how Thomas Sandby acquired his undoubted proficiency in architecture, and the capacity to expound it, without any of the drilling, or education, or other methods adopted by this generation—to say nothing of examination. The quotation from Thomas Sandby's peroration, on p. 224, is specially striking, and leads to the conclusion that he certainly acquired his proficiency by "unremitting attention and indefa-"tigable exertion," or, as the writer in the Journal aptly paraphrases it, "hard study and diligent "application."

But it may well be asked, "Where does Sandby "refer to or imply the necessity of progressive "examination?" It is rather hard to say whether the last five words used by the writer on p. 224 are to be classed as pathos or bathos, or an example of that curious aberration of a mind—such as one too often sees with regret—warped by the constant contemplation of one side of a question.

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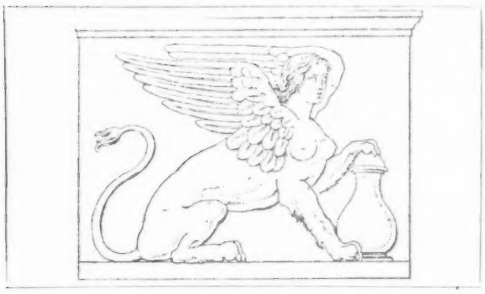

MINUTES. VIII.

At the Eighth General Meeting (Ordinary) of the Session, held on Monday, 11th February 1895, at 8 p.m., Mr. F. C. Penrose, F.R.S., *President*, in the Chair, with 27 Fellows (including 8 members of the Council), 24 Associates, 1 Hon. Associate, and 22 visitors, the Minutes of the Meeting held 28th January 1895 [p. 225] were taken as read, and signed as correct.

The following candidates for membership, whose nomination had been previously approved by the Council, were recommended for admission:—As FELLOWS, William Henman [A.] (Birmingham); Paul Waterhouse [A.], M.A. As ASSOCIATES, Thomas Kershaw (Halifax); William Hodgen; Ernest Edward Fetch; Frederick Bligh Bond (Bristol); John Pain Clark; William Edward Vernon Crompton (Wigan), *Ashpitel Prizeman* 1894; Frederick Ernest Pearce Edwards (Liverpool); Henry Ernest Kirby; Charles Edward Bateman (Birmingham); Alfred Whitelock Field; George Gunn (Sandgate, Ayr); Wilberforce Ernest Hazell; John Henry Price (Liverpool); Harry Tom Boden Spencer; George Augustus Bligh Livesay (Bournemouth); Alexander Paul Macalister (Cambridge); Thomas Harry Weston (Bristol); Henry James Wise; Herbert Jeffrey Palmer; Joseph Spain (Sunderland); Charles Septimus Errington (Newcastle-on-Tyne); Frederick Brice Hobbs (Liverpool); Harry Wilson Pye; John Cadwallader Dewhurst (Belfast); William Edgar Gauld (Aberdeen); Robert William Horn (Glasgow); Vivian Herbert King; Alfred Henry Mills (Manchester); Thomas Aloysius Pole (Brisbane); George Patrick Sheridan; Percy Henry Adams; Harold Bailey (Hull); Percy Paovich Cotton; William Adam Forsyth; Francis John Potter; Charles Henry Smith; John Borrowman, jun.; Harry Ebenezer Budden; Frank Berridge Cooper (Leicester); Archibald Campbell Dickie; Samuel Stevens Dottridge; Arnold Seaward Tayler; Harold Edmund Church; Henry Ingle Potter; Alexander Robert Hennell; Allan John Pinn (Exeter); Sydney Benjamin Beale; Henry Ascough Chapman (Scarborough); George Coster (Bournemouth); Ernest Outram Cummins; Herbert Alfred Legg; George Oakley Scorer; Thomas Duncan Rhind; Luke Barlow (Manchester); John Laurie Carnell (Norwich); Hyla Edward Elkins. As HON. CORR. MEMBER, Louis Viollier (Geneva).

In reference to the award of the Royal Gold Medal for the current year—the day of election being Monday, 11th March 1895—By-law 64 was read; and the President announced that the Council proposed to submit to Her Majesty The Queen the name of Mr. James Brooks, *Vice-President*, as a fit recipient of that honour, for his executed works as an architect.

Papers on THE VALUE OF SIMPLICITY IN ARCHITECTURE, by Mr. Halsey Ricardo, Mr. Basil Champneys, B.A., and Mr. F. C. Penrose, F.R.S., *President*, having been read and discussed, a vote of thanks to their authors was passed by acclamation; and Mr. Champneys having acknowledge the compliment, the Meeting separated at 10 p.m.

PROCEEDINGS OF ALLIED SOCIETIES.

MANCHESTER.

Electric Lighting. By E. A. Claremont.

Read before the Manchester Society of Architects, 8 Jan. 1895.

The purpose of this Paper is to describe various methods of obtaining light by electricity, many appliances required for the purpose, and the methods of erecting them. The subject is too vast to be treated in detail within the limits of a single Paper, so I shall touch only upon points of special interest.

In order that I may not use terms which may be confusing I have prepared the annexed table, which you can refer to, and on which you will see many of the terms are synonymous. You are all, doubtless, familiar with primary batteries of one kind or another, and how by connecting the two elements contained in a battery a current is set up.

TERMS.

VOLTS.
E.M.F.
ELECTRO-MOTIVE FORCE. — Pressure.
POTENTIAL.

AMPÈRE
CURRENT. — Flow of Electricity.

OHM=RESISTANCE.
WATT=ELECTRICAL ENERGY.
CURRENT × VOLT=WATTS.

Here is a diagram (fig. 1) where you will see that the battery, having a certain electromotive force, and the conductor joining the two elements or poles of the battery, having a certain resistance, an amount of current of definite quality will flow. By the formula you will see that, given any two of three quantities, the third can be

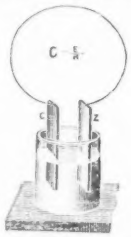

FIG. 1.—BATTERY AND CIRCUIT AND OHM'S LAW.

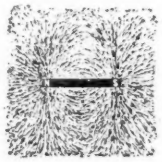

FIG. 2.—MAGNET AND LINES OF FORCE.

ascertained. Another method of obtaining a current is by "induction." To many this term is confusing and the process mysterious, but a little explanation will soon make it clear.

Any magnet has continually between its two poles lines of force or magnetism (of course invisible), and the diagram (fig. 2) illustrates this phenomenon. If I take a short length of insulated copper wire and wind it into a ring over my fingers, and then twist the bared ends together, and now revolve this coil in the lines of force from the magnet, current is "induced" in the coil and flows continuously in it while I continue to revolve it. That current is therefore obtained by "induction." I have had to describe these two processes of obtaining current in order to explain more clearly what follows.

I will now describe various types of dynamos, which, of course, constitute the chief means of obtaining current in the first instance for electric lighting.

It is true electric lighting can be obtained from primary batteries, but so far nothing has been achieved in that direction to be compared with dynamos, and most electricians rather shudder at the thought of having to use them for such a purpose. To obtain electric energy of really useful quantities from them, I think they all need very

strong acids, which give off terrible fumes. I have heard of a good room in an hotel being used for a few hours to store such goods in to give the electrician an opportunity of showing his wares, with the result of the paper and paint being bleached and coming off at the slightest touch. But that battery may have been a bad one. We can divide dynamos into three classes: "Series," "Shunt," and "Compound." Their names are very descriptive of their constitutions, as you may readily see from the diagrams.

Fig. 3 shows a "Series" dynamo, and the armature, which is merely the small coil I made on my fingers just now, mechanically applied, revolves between the poles of the magnet, and cuts the lines of force, and so has induced within it a current of electricity. This current is, by a simple appliance called a "commutator," which is attached to the armature winding, made to leave the armature in one direction and a practically continuous stream. The current, leaving by one brush or collector, passes through insulated wire wound on the magnet, and then on through all the paths provided for it in the external circuit, and back through the other brush—the external circuit representing merely any work or obstacle through which the current must traverse before it can get back to the machine. Current will pass through the various paths provided in multiple in proportion to their resistance. Now, if I take a bar of iron which has a little magnetism in it, I can induce a current in a coil as I have shown; but if I take the same bar and wind on it insulated wire, through which I pass a current, the magnetism in the bar is increased enormously. What was only sufficient to be noticeable with a delicate instrument will now lift heavy weights. Such an arrangement is an electro-magnet. This bar of iron has sufficient magnetism to attract a pivoted needle, but that is practically all it can do. On attaching this source of electricity to allow a current to flow round the wire on the iron bar, the strength is considerably increased. The diagram of the Series machine shows how the current must pass round its iron magnet limbs before it gets to the external circuit, the magnet circuit and external circuit being in "series"—hence the name—and the result is that the magnet is rendered very strong, because it is converted into an electro-magnet. This armature will, up to a certain point, give out current according to the resistance of the external circuit, and so any variation in the external circuit will affect the strength of the magnet. For instance, suppose we add another path, then more current will traverse the magnets, and they will become proportionately stronger, and the electromotive force greater. So with a Series machine every additional path to the external circuit *strengthens* the machine and *increases* the E.M.F.

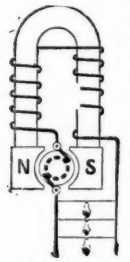

FIG. 3.—SERIES DYNAMO AND CIRCUIT.

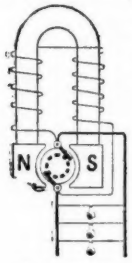

FIG. 4.—SHUNT DYNAMO AND CIRCUIT.

Fig. 4 is a diagram of a "Shunt" machine. The principle is exactly the same, except that the current round the magnets is "shunted." That is to say, a little is always able to go round the magnets, the path being open to it and of constant resistance. There are then two circuits open to the armature: one the shunt, and the other the external, and, as explained in the case just now, they will absorb current according to their relative resistance. We will suppose the external and shunt circuits are equal; then half the current from the armature will traverse each. If we now add another path to the external, more current will pass that way, and proportionately less round the "shunt." So that with a Shunt machine every additional path to the external circuit *weakens* the machine and *lowers* the electromotive force. This is exactly opposite to the result with the Series machine. Electricians require generally a dynamo which will give an unvarying E.M.F. irrespective of the load or external circuit.

I have shown two machines giving opposite effects, and now, if we combine the two, we obtain just what we require—a machine giving a constant E.M.F. irrespective of the load. This is a "Compound" machine, and, as the diagram (fig. 5) shows, the current can always traverse the shunt magnet coils, and all current passing to the external circuit must traverse the Series magnet coils. So with a Compound machine, provided the speed does not vary, the pressure will not vary, and you will have steady lights. The defect in the Shunt machine can be avoided by adjusting the resistance of the shunt circuit to suit the external, and that is easily done if an attendant is constantly on the watch; and in the Series machine by preventing more than the requisite current going through the magnet coils. If the resistance frame is provided with a switch the current passing through it can be graduated. If, then, this is inserted in the circuit of the shunt, the current can be regulated; and if it is inserted in the Series magnet circuit, some of the current will pass to the external circuit without traversing the magnets. A good dynamo (excepting some peculiar Series dynamos) should never spark. Provided the machine is correctly designed, the brushes, which are on a rotating frame, can be set at a certain neutral point where no sparking occurs, and the lines of force passing between the magnet poles take up a certain position according to the current leaving the armature. Now, if more current is demanded from the armature, it throws the lines of force into a new position, and unless the brushes are rotated to suit, sparking will occur. So the brushes must be adjusted to suit the load. This is merely a matter of degree, a good dynamo requiring only two or three adjustments from full load to open load. Generally speaking, in comparing dynamos, that one having the smallest armature compared with its magnets is the least likely to spark. If two manufacturers have each a ton of metal with which to produce a dynamo, one can make a machine from it to give, say, 200 lamps, and the other 400 lamps—the difference in the diameter of armature accounting for the difference in output. But the machine with the smallest armature will be the better; and, it follows, the heavier the machine for a given output the better it is. So the prices of dynamos are not comparable unless the weights, diameters of armatures, and speeds are alike. The purchaser must not be misled by spindle speeds, but must compare the periphery speeds, and see which machine is mechanically best suited for its speed. I have so far only described what are called continuous current dynamos, the current flowing in one direction; but there are machines made which produce a current which flows backwards and forwards, called an alternating current. They are somewhat similar in principle to those I have described, having, however, no "commutators" (which, you will recollect, I mentioned as being an apparatus attached to the armature of a continuous-current machine to obtain the flow of current in one direction), but merely collectors; and as the current produced by them alternates, it cannot, except under very special conditions, be used to magnetise the

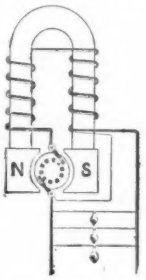

FIG. 5.—COMPOUND DYNAMO.

magnets of the machine; and so, generally, a small continuous-current machine is used for this purpose. These alternating machines are seldom used for private installations, but are most useful for lighting towns and conveying electricity over large areas.

Every dynamo has a definite output at a definite speed—that is to say, it has a definite E.M.F. and current, which, multiplied together, are termed watts. The word "watts," therefore, represents so much energy, but does not describe the proportion of E.M.F. and current. For instance, a dynamo capable of supplying 1,000 watts could be wound for 100 volts and 10 ampères, or 10 volts and 100 ampères, or 50 volts and 20 ampères, and so on, the multiplication of the volts and ampères giving a result in watts. Supposing, then, it was desired to light a widely-distributed area, it would mean that a certain quantity of electrical energy, *i.e.* a certain number of watts, must be conveyed to the various points. Now, conductors will carry current according to their sectional area, so the less the current to convey, the smaller the wires can be; and as the copper wires are one of the chief items of expense in electric lighting, this fact is taken advantage of by the watts being conveyed at a high pressure. That is to say, if three miles off we want electrical energy represented by 1,000 watts, we might convey it by having a wire large enough to carry 2 ampères at 500 volts. The expense would be exceedingly small compared with conveying 500 ampères at 2 volts, because 500 ampères would require an enormous wire.

Alternate current machines permit of their being built for very high pressure, and so are often used for distributing energy under such difficult conditions; but current at 1,000 volts, for instance, is not a desirable thing to have in private houses, because it might cause death if anyone handled the wire or fitting conveying the current; so transformers (fig. 6) are used to reduce the energy, when it has reached its destination, to something like reasonable pressure. You will all have seen an induction or shocking coil, and a transformer is practically the same thing. The iron core is wound with a fine and a thick wire separated from each other, and the current at high pressure arriving at, traversing, and returning from, the fine wire causes the coarse wire to give off almost the same amount of energy, but at a lower pressure. So the energy has been conveyed at a high and economical pressure, and is reduced at its destination to the low and domestic pressure.

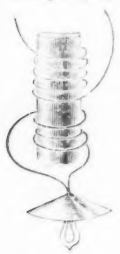

FIG. 6.—TRANSFORMER.

The ultimate pressure usually found in towns is 100 volts. At Deptford, Mr. Ferranti, I believe, proposed to distribute current at an initial E.M.F. of 20,000 volts, but had so much trouble in controlling such a high-tension current that he reduced it to 10,000. The Manchester Corporation have adopted Dr. Hopkinson's five-wire system, of which fig. 7 is a diagram. You will see there are four dynamos of 100 volts each in series, giving a total of 400 volts between the two outside wires. Supposing each dynamo had its two wires as usual, eight wires would be required; but by this system there is a saving of three, besides other important advantages. The middle wire is "earthed"—that is, electrically connected to earth—so as to comply with the Board of Trade Rules prohibiting more than 200 volts to earth in any building. With all continuous current systems especially, the loss of potential in conveying the current is very difficult to contend with. The trouble arises in the following manner:—We will suppose 5 ampères at a pressure of 100 volts is being conveyed to the building we are now in, and the wires are just large enough not to lose more than 2 per cent. That 2 per cent. is hardly noticeable, but on our turning on lamps absorbing another 20 ampères, the wires would lose a very considerable percentage, and the lamps would consequently fall in brilliancy. You will perhaps have noticed incandescent lamps about the town varying in brilliancy from time to time, and generally the cause is only the varying load on the mains, and not due to any defect at the supply station. Before leaving the subject of dynamos I should perhaps explain that an electric motor is practically the same thing as a dynamo, except that a dynamo has power imparted to it to turn it round; whereas a motor has only to be supplied with current, and it will revolve and give off power by a belt on its pulley or other means. You will have seen motors driving ventilating air-propellers. This means of transmitting electrical power and then converting it into mechanical is often used for colliery work—driving pumps, hauling tubs, and so on, and, in fact, for any work where it is not convenient or economical to have an engine.

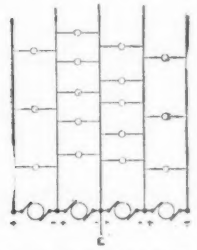

FIG. 7.—FIVE-WIRE SYSTEM.

There is a large field open to dynamo manufacturers to supply the works throughout the world now using steam uneconomically. Instead, in a print works, for instance, of having one or two medium-size engines and, perhaps, twenty small ones, the latter taking the 16 lb. and 18 lb. of coal per H.P. hour, it is possible to have one large engine driving a dynamo which will supply as many motors as are required, the result being that the steam power is obtained at an expenditure of more like 2 lb. of coal per H.P. hour, and the other losses of condensation and radiation are avoided. Besides these advantages the motor can be stopped at any moment; whereas the small engines are always running owing to the trouble of starting them, and the motors will run at a constant speed which can be altered by the workman in a few seconds when required. There are, I am sure, many instances of works within a few miles of Manchester where half the coal bill could be saved; and when a firm is spending, say, £5,000 or £10,000 a year in coal, the item is worth considering. The cost of the plant is, I should estimate, saved in about three years. Just as alternating high-tension currents can be reduced by transformers, so can continuous currents by motor transformers. The continuous high-tension current enters a motor as I have just described; but this motor could, instead of driving machinery, be made to drive a low-tension dynamo, the current from which could be used for lighting or other purposes. As a matter of fact, such a motor transformer has the two armatures on one shaft, and so appears like one dynamo, except that it has two commutators. In both alternate and continuous current work transformers can be made to transform the current into a higher tension instead of a lower, and continuous current transformers are often used throughout a district to add the little pressure to the circuit which has been lost in transmission, as I have just explained; so if we had such a machine in this building, we should not have a drop in the brilliancy of the lamps occasionally, because it would compensate for it. The great objection to such continuous current transformers is that, having, unlike the alternate current transformers, to be in motion, they require frequent attention.

As to motive power, there are steam, gas, and oil engines, and water turbines. In nearly every instance steam is used by supply companies and corporations; but I am glad to see gas-engines are attracting considerable attention for the purpose lately, and in one or two cases in Great Britain are being used.

I have always advocated the use of gas-engines for cor-

porations and companies having gas works on their hands, because they cannot only supply the gas at a small cost, but can convey it cheaply; whereas I have just shown the difficulty of conveying electrical energy except at very high pressure, and then with alternating currents; and if in such a town as Manchester there were many small electric-light stations, each providing for its small surrounding area, the current could be continuous without the loss of potential we are so much troubled with. Gas-engines are often badly spoken of through the lights pulsating, owing to the pulsating action of the engine itself; but this is quite unnecessary if the work is in the hands of first-rate contractors, who, sooner than be stinted in price, will let the order go elsewhere. Oil-engines are, I am very glad to say, coming rapidly to perfection. Electric lighting has been denied to many gentlemen for lighting houses hitherto owing to the necessity of having a steam engine where no gas existed, but this need not be so any longer. The cost of running a Hornby, Ackroyd, or Crossley oil-engine is, I understand, about ½*d.* per B. horse-power per hour; and as for a private house generally 6 or 8 B. horse-power only is required for two or three hours daily to charge the cells, you can see the expense is insignificant. The Crossley and Tangye gas-engines cost even a little less to run, with gas at a moderate figure. Either a gas or oil engine requires very little attention.

Anyone having the opportunity of using a water turbine is, of course, very fortunate, as he is practically getting his power for nothing. There is an installation at a private house within very few miles of Manchester where there is a turbine about 100 yards from the house, coupled direct on to a dynamo capable of supplying about 170 lamps of 16 candle-power each. The mains are insulated and protected with lead covering, and then laid in wooden tarred troughs to the house, where there are, besides the lamps mentioned, a number of presses—like electric bell presses—fixed in different rooms; and anyone, on pressing one, can automatically start the dynamo and turbine 100 yards off, and the light is at once available. By the same means, besides an ordinary switch to each lamp, the whole can be extinguished. Such an arrangement, I think, is perfect, as practically no attention is required beyond oiling the machinery, say, once a week, and the first cost is by no means large.

I must also mention steam turbines, which have been in use for some years, although comparatively rarely used. The principle is merely the passing of a jet of steam past blades attached to a shaft, the velocity of the steam giving the remarkable result. The speeds required by such machines are, however, I think, greatly to their disadvantage. One can imagine that a machine requiring a speed of 4,000 to 6,000 revolutions, with blades running within, say, one-thousandth of an inch to the cylinder, necessitates great accuracy and perfect workmanship. These steam turbines have the dynamos on the same shaft, and so a very small dynamo gives a tremendous output, the speed being so high. The cost of production is small, but I should imagine the cost of repairs would be great.

We now come to storage batteries or secondary batteries—or accumulators, as they are often called. These are exceedingly valuable in rendering supply-station plants on the continuous current system capable of coping with a sudden demand for current, in case of a fog, for instance, and private house plants more secure through the light at evening and night not being dependent upon moving machinery.

Accumulators have improved very much of late years, and competition having sprung up through new types being invented, they are procurable at more reasonable rates than hitherto, and this, combined with the improvements in the article itself, has brought them into more general use. These are, of course, charged with a dynamo, each cell requiring 2½ volts to charge it, and giving out, when discharged, about 2 volts; so, for 100-volt circuit, fifty would be required; but, as they are often discharged as low as 1·9 per cell on emergencies, fifty-three would be necessary, and one for reserve, making fifty-four. Each cell consists of a number of plates about 12 inches square and ⅜ inch thick, standing on edge, and divided one from another by ebonite strips. The size of the plates is not increased to obtain greater capacity, but the number of plates, because by increasing the size of the plates they are likely to bend themselves.

Accumulators may be put up in boxes of glass, which is preferable for stationary use, as it permits of the plates being examined. For portable work, lead boxes are substituted for the glass, with wooden cases and lids fitted to them. Each cell will give a certain current for so many hours—say 20 ampères for 10 hours, which would be called a 200-ampère hour cell, because 10 ampères for 20 hours, or any such equivalent not exceeding the maximum current of 20 ampères, could be taken from it. The plates are of lead, prepared in different ways according to the make. The great distinction is, however, between what are termed "pasted" and "formed" plates. Pasted plates, made by one firm only in England, consist only of a plate of lead studded with holes filled in with peroxide of lead for the positive element and litharge for the negative, or else the paste is held in small ridges or lips formed on each side of the plate. In either pattern I consider the lead very likely to become dislodged through the electrical action causing gases to be given off. Much ingenuity has been expended to keep the paste in, but nothing, I consider, is so good as a cell which does not require any paste. Again, the holes, which in one pattern are drilled all over and right through each plate, greatly weaken them and allow them to buckle or bend, which is always likely to happen with rough electrical treatment, such as over-discharging. The "formed" plates, however, have no such troubles. They have no paste and no holes in them, but are formed in one, and, I think, the best pattern, by taking a long ribbon of lead about ⅜ inch thick and bending it back on itself until it forms a plate 12 inches square. The object is to obtain great strength and rigidity. Whereas a plate with holes is easily bent, this is very difficult to bend. The large surface offered by the length of ribbon on the two faces of the plate and between each layer is chemically and electrically treated to obtain a thin skin of chemical substance as in the pasted type, but the skin being produced from the lead itself, and not pasted on, adheres very firmly. With pasted cells, the paste gradually wasting, the storage capacity gradually decreases, but with these plates the skin should gradually get deeper until at last—after very many years—the entire lead plate will turn to the same material as the skin, when the maximum capacity will be obtained and the plate will collapse. So in each plate is the life determined. For private house work, accumulators should always be put in of ample size. Better do without them than stint the capacity. They cannot in reason be too large. I have never known an instance of cells being unsatisfactory where they were large enough and reasonably treated. The contractor is generally so anxious to quote low, to obtain the order, that he specifies the smallest size possible, and assures the confiding client that all will be well. All lasts well long enough for him to get paid, but in a year or two the trouble begins. It is true the client very often misleads the contractor by underrating his requirements; and the only sure way for the contractor to estimate correctly is to allow storage for two-thirds the number of lamps installed for ten hours, which allows for five hours on two succeeding nights, so that there is no necessity to charge the cells on a Sunday. Another cause of cells going wrong is the arrangement for charging being irksome.

The contractor should—although he seldom does, be-

cause, again, he is anxious to quote low, but he should—study very carefully how to arrange his charging plant so that the work will be easy. The attendant is generally a gardener, and knows very little about anything but spades, and if he is called upon to do something that is tedious and distasteful to him, he very naturally—for I think any other man would do the same—shirks the work a little, not enough for his deficiencies to be apparent at the time, and he thinks all is consequently going well; but the day of reckoning comes in a year or two, when the cells fail. If, on the other hand, the plant will almost run itself, he will start it up and will not begrudge the cells another hour or so of charging. The difference is very marked; the installation is most successful. It is all in the hands of the contractor, and is the old tale of good and bad work. There are various methods of ascertaining the charge contained by accumulators. The specific gravity of the acid decreasing as the cells are discharged will, if the attendant is observant, by means of a hydrometer, give all the information required.

The E.M.F., again, is an indication, and an experienced eye will, by the colour of the positive plates, be able to judge very accurately. Some time ago a friend of mine showed me his cells and complained of their want of capacity. I examined them and found they appeared healthy, but required charging, although he assured me they had been charged fully a few hours previously. I could only conclude that they had discharged themselves since, as the colour of the plates distinctly indicated they were discharged, and I said a leak on the circuit must exist. I happened to see the two mains leading into the house from the garden through an iron grating, and as I thought they looked badly insulated at that point I examined them and found the grating quite warm. So the cells were going to ruin through being continually at work warming his grating. The fault was corrected, and they have since behaved admirably.

Having described the methods of generating and storing current, we now come to the wiring. This is a class of work that is quoted for at prices that puzzle all concerned—trade and consumer alike. To-day in Manchester some firms for simple work ask only 9*s.* and 10*s.* for each incandescent lamp of 16 candle-power erected complete, whilst others ask 20*s.* or 25*s.* The only explanation I can give you is that the workmanship and materials differ as much as the prices. There are two methods of wiring, known as the "tree" and the "distributing." Fig. 8 is a diagram of the "tree" method. This is cheap, and should only be used for mills and such places where the other method is hardly applicable. The defect in this system is the large number of joints necessitated. You will notice the mains start from one point, and branches and sub-branches are taken off where lights are required.

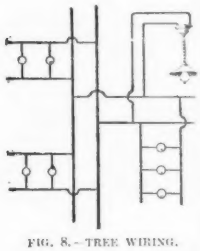

FIG. 8.—TREE WIRING.

At each point of branching two joints are necessary, each having a cut out which I shall describe later. Now the contractor should use wire of not less than 600 megohm insulation. That is to say, the current, in endeavouring to escape, finds a resistance offered by the insulation of 600 million ohms—which is an enormous figure, and means practically perfection if it could be secured when the wire is fixed. The wire is submerged in water by the makers for twenty-four hours and then tested to see that the 600 megohms are obtained.

The covering of the wire is pure rubber immediately on the tinned copper, the tinning being to prevent the rubber attaching the copper. This pure rubber is in the form of a tape, and is wrapped on spirally, so that water could easily get through *that*, but on top of the pure rubber is vulcanised rubber without the finest hole through it at any point. This gives a wire quite waterproof, and then as a protection from rough usage the vulcanised rubber is braided over. Now in an installation of 200 lights, at least 400 joints on the "tree" method are necessary, so all the precautions taken are lost unless the joints are as good as the original covering. When I tell you I never saw a joint made by any contractor which was not absurdly weak compared with the original covering, you will understand my contention that the expensive wire is rather a farce. The strength of a chain is decided by the weakest link, and so in this case if damp ever happens to get near a joint, the value of the insulation is determined by the covering on that joint.

Now the other method called the "distributing" is very different, for there need be no joints. The mains starting from one point radiate to various other points with wires of different sizes according to the current required, and at these points are distributing boards so-called—made of enamelled slate preferably—upon each of which there are a number of cut-outs; the wires leading to the boards are taken direct into cut-outs, and those leaving from cut-outs, pieces of wire at the back forming the necessary connections. Dry positions are selected for these boards, and, supposing an installation to require ten of them, the risk of damp doing harm is small compared with the installation with 400 joints, and the perfect wire I have just described is unimpaired. To show how reliable this distributing system is, I may mention I have seen on the occasion of a fire breaking out (*not* through the electric light) a fireman playing with a hose round a room with the electric light still at work, and the wiring was found afterwards to be damaged only by fire and not by water.

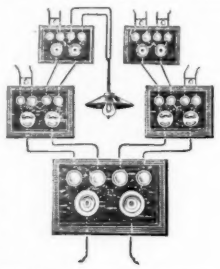

FIG. 9.—DISTRIBUTING WIRING.

In steamy places, by placing the lamps in lanterns as shown on diagram fig. 10, and having no joints, absolute security is obtained—in fact the work could be submerged and no harm come of it. All joints if they must be made should be soldered and wrapped as well as possible with pure and prepared rubber tapes, but I know of hundreds of joints that are not even soldered. The cut-outs I have just mentioned are merely appliances for inserting a piece of wire in circuit which will readily melt on any excessive current passing through it. They and all electric light fittings should be made of glazed porcelain, and should have the brass work fixed in by screws let into the face of the porcelain, so that no metal work at the back can touch a damp wall.

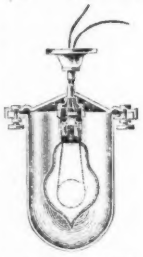

FIG. 10.—LANTERN AND WIRING.

Such are known as "high insulation" fittings, to distinguish them from fittings showing brasswork at the back. Tin wire is generally used to trim cut-outs with, as it does not oxidise and so lose its current-carrying capacity. Lead, on the contrary, is very treacherous, gradually deteriorating until at last it fuses at an inconvenient moment. The fuse wire should be large enough to convey fifty per cent. more current than the maximum load of the wire it is protecting. Taking the "tree" system for instance, you will see there is at every incan-

descent lamp a path for the current, and, as I have before mentioned, the path offering the least resistance will convey the most current. Supposing, now, the two wires leading to a lamp were to come into contact, the resistance of that circuit would be reduced to zero compared with the rest, which have each a high resistance lamp in them; so the rush of current down that circuit would be enormous, and would soon fire the wire, but the fuse at the cut-out would melt in a second and stop it.

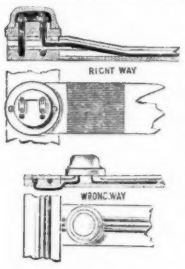

FIG. 11.—CUT-OUT SYSTEM.

As shown in fig. 11, there is a correct and an incorrect method of applying cut-outs: the correct places the cut-out immediately on the joint, so that the current must go through the fuse wire before it can get to its work. The incorrect places the cut-out too far away, and the wires might get together here at the point they cross, and the current obtain a low-resistance return path without passing a fuse wire.

Switches are mere mechanical means of breaking a wire. They must always, however, have a quick break action. That is, be so made that it is impossible to bring the contact lever away slowly. The metal current-carrying parts must be large enough not to heat, for all currents must have carrying capacity proportional to them, or they will heat the conductors of any kind. It is on this principle that electric welding is effected. A heavy current being passed between comparatively small capacity pieces of metal instantly melts and welds them.

Ceiling roses are merely appliances for joining the flexible wires by which incandescent lamps are hung to the conductor or the ceiling. They should always contain a fuse wire and have an arrangement for gripping the flexible, so that the lamp shade and flexible cannot be pulled down in cleaning. Lamp-holders are to hold the lamps and shades, the contact being made with the lamp by small spring plungers. These, too, must have cord grips.

The candle-power of incandescent lamps varies according to the size of the filament and the amount of current allowed to pass through it. With a given voltage a certain length and diameter of filament will give a certain light, but by increasing the diameter of the filament the light will be increased.

The 16 candle-power lamp here, for instance, would give, perhaps, 16,000 candles, if enough current was with a greater E.M.F. forced through it, but the filament would be raised to such a high point of incandescence that it would not last many seconds.

The makers of incandescent lamps are always seeking a material and method of preparation which will produce a strong filament, so that by raising its incandescence without reducing its life too much, they can obtain a more efficient lamp.

The candle-power of a filament rises to the sixth power of the current, so if a filament will only bear a very little more current the advantage is manifest. These lamps are accordingly sold to give a certain candle-power with a certain consumption of energy. Generally a 64 watt 16 candle-power lamp is used, or 4 watts for each candle-power produced; but lately lamps requiring only, say, 48 watts (or an economy of 25 per cent. of energy) have been put upon the market. They do not last quite as long as the less efficient, but where the energy is very dear it sometimes pays to break lamps and save current. Arc lamps vary much in design and price, but I consider there are only two or three good makes. An arc lamp is a piece of mechanism electrically controlled, which ensures two carbon pencils always remaining exactly the same distance apart.

In the inverted arc lamp, a style of lighting just coming into vogue, the light is thrown upon the ceiling and reflected back down into the room. The arc itself cannot be seen, and so the glare of the ordinary arc lamp, which is so objectionable, is avoided; there are many at work in this city. The inverted arc is fitted with a new apparatus which avoids the necessity of wires festooning on to the lamp to permit of it being lowered. The lamp is fitted with a barrel contact piece, which, as it enters the fitting on the ceiling, makes contact.

In the battery and galvanometer, you will notice that on the circuit being completed the needle deflects; if, then, the needle can be deflected through something which is supposed to be insulated, it shows a fault exists. There are two instruments called an ohmmeter and generator for the same purpose, one really being a small hand-dynamo, and the other a galvanometer. By these 200 volts can be put on the work, which is more than it should be ever afterwards subjected to. All work can be tested by such instruments. They will show if an installation is perfectly insulated, or is somewhere in contact—the wires with one another, or with earth—that is, with the gas or water-pipes, or other parts of the building; but you must bear in mind they will not show faulty joints, &c., until damp has actually attacked them.

CARDIFF.

The term of office of Mr. Edwin Seward [*F.*], as President of the Cardiff, South Wales, and Monmouthshire Society, having expired, his place has been filled by Mr. E. M. Bruce Vaughan [*F.*], recently elected.

LEGAL.

Timber Structure, Temporary or Permanent.

THE LONDON COUNTY COUNCIL *v.* GLUCKSTEIN.

On 21st January Mr. Lane, Q.C., heard, at the North London Police Court, the case of *The London County Council* v. *Gluckstein*. The summons was against Mr. Gluckstein, who is a builder, Tottenham Court Road, for erecting a temporary timber stage without the consent of the London County Council, or in conformity with the Metropolis Building Acts. So far as could be learnt, the charge was framed under the old law, and not under sections 83, 84 of the London Building Act 1894, which now govern the matter. Mr. Chilvers appeared for the London County Council, and Mr. R. C. Glen for the defendant.

The point of contention was as to whether it was a permanent or a temporary structure, and surveyors were called on either side giving opinions *pro* and *con*.

Mr. Barry, for the London County Council, said the structure was so roughly put up that it might have been done by a hedge carpenter, and, with the quality of the timber used, did not think it could last more than fifteen years, whereas his estimate of a permanent structure was a life of a hundred years.

Mr. J. Webster [*A.*] said he was called by the defendant to survey the structure, which he found supported by stout uprights, sunk four feet into the ground, and resting on about two feet of concrete, the uprights being properly creosoted. All the timbers were strongly spiked together, and he was of opinion that the stage in question would last thirty years, and much longer if repaired.

Mr. Chilvers submitted that, if this were intended as a permanent structure, the timbers would have been mortised together and bound with iron.

Mr. Lane said that this was not necessarily so. He remembered having been engaged in a dispute as to the building of a jetty, and in that case one of the most eminent of surveyors, who was called in as arbitrator, said that in rough work it was not necessary to employ joiners to do mortising, the only essential being butting and spiking

together, as had been done in this case. Putting all the evidence together, he came to the conclusion that this was a permanent structure within the meaning of the Act, and dismissed the summons.

The London Building Act 1894.

THE BEDFORD COURT MANSIONS CASE.

On the 28th January the first magisterial ruling was given on the London Building Act 1894 The following report is taken partly from the *Law Journal*, and partly from notes of the case kindly furnished by Mr. Bernard Dicksee [*A.*], who was present at the hearing:—

Mr. Charles Forster Hayward [*F.*], District Surveyor for the parish of St. George, Bloomsbury, served the "building owners" of Bedford Court Mansions with notice of objection to the proposed erection of a certain building. The building owners summoned the surveyor before Sir John Bridge at Bow Street, under section 150 of the Act, to show why his objection should not be overruled.

Mr. Horace Avory, for the complainants, explained that the object of the summons was to obtain the ruling of the chief magistrate as to the meaning of section 212 of the new Act. In 1890 his clients entered into a contract with the then Duke of Bedford to take the lease of a piece of ground in what was now Tavistock Street, but which was at that time a mews, at a ground-rent of £2,000 a year (subsequently modified to £1,600). They undertook to pull down and remove the existing structures, and erect certain flats in accordance with plans approved by the Duke of Bedford or his representatives, and complete them by June 1895. The buildings were to be erected in five blocks (subsequently modified to four), and a lease was to be granted for each block as completed. One block had been erected, and it was now proposed to go on with the erection of the other blocks, which were to form part of the same scheme, the elevation being continuous. The plans were approved shortly after the signing of the contract, and some years before the passing of the new Act. The complainants had paid the ground-rent since 1890, in all about £7,000. They had given notice to the surveyor of their desire to proceed with the erection of the remaining blocks, and he had given them notice that the buildings must be carried out under the new Act. The importance of this to his clients was that, under the new Act, the County Council could require a much larger area of air space than they could under the earlier Acts. Therefore, if the contention of the County Council was good in law, the complainants would have to curtail the size of their buildings, and there would be a corresponding reduction in the rents to be obtained, involving a loss of nearly £2,000 a year. There were two questions to be decided—(1) Whether the building the complainants proposed to erect was in progress when the new Act came into force at the beginning of the year, seeing that it formed part of the building of which one block had already been erected; and (2) whether, supposing it was not a building in progress at the time, it was not a building which had to be carried out under a contract entered into before the passing of this new Act. In support of his argument, Mr. Avory quoted the following sections of the Act:—Sect. 210: "A building, "structure, or work erected or constructed before the com- "mencement of this Act to which no objection could have "been taken under any law then in force shall (subject to "the provisions of this Act as to new buildings or the "alteration of buildings) be deemed to be erected or con- "structed in compliance with the provisions of this Act." Sect. 212: "Notwithstanding anything contained in this "Act, a building, structure, or work which has been com- "menced before and is in progress at the commence- "ment of this Act, or which is to be carried out under any "contract entered into before the passing of this Act, may "be completed subject to and in accordance with the pro- "visions of the Acts relating thereto as in force immedi- "ately previous to the passing of this Act." Counsel added that during the present month the County Council had consented to the addition of bay windows and balconies to the building (under section 75 of the Metropolis Management Amendment Act 1862).

Evidence was then given as to the agreement between the complainants and the Duke of Bedford, and as to the date of the approval of the plans.

Mr. Freeman, who appeared for the County Council, contended that the buildings it was now proposed to erect were new buildings under the new Act. It was true that block A had been erected, but that did not throw a protection over blocks B, C, and D. He submitted that they were separate buildings, and not a continuance of the same building. By section 74 (1), buildings were required to be separated from each other by party-walls. Therefore, as each block was separated from the next by party-walls, it was a separate building, and the agreement supported this view, as each block was to be granted a separate lease as soon as completed. Section 212 was not intended to include a "building agreement" in the term "contract," for if that interpretation were allowed, a person who had entered into a building agreement to cover a large estate with houses might contend that all those houses could be erected under the old Acts, even although the building operations might extend over twenty or thirty years. That would result in an absurdity, for it could never have been intended that the new Act should be hung up in that way. He argued that the expression "contract" meant a contract between the building owner and the builder to erect the building.

Mr. Avory, in reply, stated that he did not contend that any "building agreement" entered into before the passing of the Act would be included in the term "contract" in section 212, and Mr. Freeman had mentioned a case where it would not; but he submitted that he had shown that in this case a definite contract had been entered into for the carrying out of this particular building—such a contract as would have entitled the Duke to sue for specific performance had his clients been in default. His clients were therefore entitled to build under the old Act.

Sir John Bridge said that there were two grounds on which Mr. Avory argued that he ought to give a decision in favour of his clients. The first was that the whole of these four blocks were one building which had been commenced and was in progress at the commencement of this Act. He was inclined to think that Mr. Avory was wrong on that point, but it was not necessary to decide that. The great point to be decided was whether this was a work to be carried out under a contract entered into before the passing of the new Act. In his opinion it was, and the building came under the old Acts. He must give to each word in the Act its ordinary meaning and its ordinary construction. It might have been better if the section he was asked to decide upon had been made clearer; but, as he said before, he could only give to the words their ordinary construction, and his decision was in favour of Mr. Avory's contention. The magistrate declined to grant costs, and notice of appeal was given.

According to the *Law Journal*, the importance of the decision is that the word "contract" is read, not as applying to a particular building contract, but as including a building agreement in respect of an estate.

*** Mr. Bernard Dicksee [*A.*] writes:—The result of the decision is, that for a building owner to be allowed to erect a building under the old Acts he must show a definite contract to carry out a par icular building. A mere building agreement will not of itself be sufficient, and in order to make it so the building-owner must show that it became a definite contract by the approval of the plans by the lessor before the passing of the Act, or that the building was in some other way particularly described.